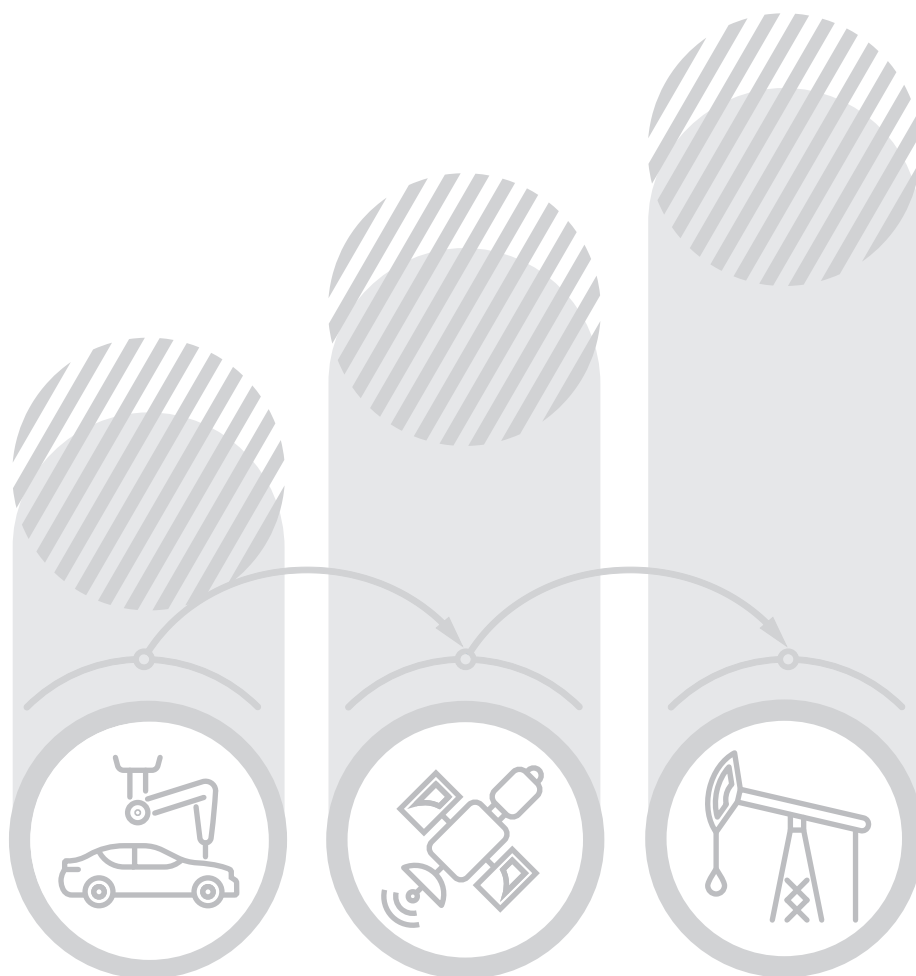


Warsaw 2023

Production of industrial products in 2018–2022



Production of industrial products in 2018–2022

Content-related works

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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 2018–2022. 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 2022”. 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



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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
cm ³	cubic centimeter	PKWiU	Polish Classification of Goods and Services
CPA	Classification of Products by Activity	PRODCOM	European product statistics
dam ³	cubic decametre	EU	European Union
n. e. c.	not elsewhere classified	EU27	27 European Union Member States
hl	hectolitre	IoT	Internet Rzeczy
hl 100%	hectolitre of pure (100%) alcohol	PLN	zloty
hm ³	cubic hectometre	1000 t	thousand tonnes
m ²	square metre	1000 units	thousand units
m ³	cubic metre	1000 bricks	thousand bricks
mm	milimeter	1000 m ²	thousand m ²
p.p.	percentage points	1000 hl	thousand hl
PKD	Polish Classification of Activities		

The abbreviated names of sections, divisions and industrial products used in the publication 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 2018–2022. 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 PKD. 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. In chapter three, data from the Community survey of industrial production PRODCOM are presented collected according to the PRODCOM List binding for 2022 in European Union countries.

Executive summary

Key data

about the survey on the production of industrial products in 2022

39 608	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
5 183	products or assortment groups covered by the observation in the annual survey
PLN 1 878.5 mld	value of sold production of products
PLN 12.8 mld	value of the sold production of products manufactured under subcontracting
PLN 32.2 mld	value of sold production of products with embedded systems
35.5%	share of products with the Internet of Things in the value of sold production of products containing embedded systems
196.0%	the largest increase in the value of sold production (2021=100) – division Oil and natural gas
16.6%	the largest share in the value of sold products – division Food products
94.6%	the share of sold production of entities employing 50 persons and more
28.2%	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
76.7%	the share of sold production reported by non-industrial entities – entities classified in section Wholesale and retail trade
23.2%	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

Sold production of industrial products

In 2022, the value of sold production at current prices amounted to PLN 1,878,501,328.2 thousand and was higher than in the previous year by 30.7% and compared to 2018 it was higher by 59.8%.

Compared to the previous year, an increase above 30.0% in the value of sold production in 2022 was recorded in: Crude petroleum and natural gas (by 196.0%), Coke, briquette and refined petroleum products (by 81.3%), Hard coal and lignite (by 75.5%), Chemicals and chemical products (by 39.2%), Food products (by 33.4%), Other transport equipment (by 32.8%), Paper and paper products (by 30.9%).

A decrease in the value of sold production of products compared to 2021 occurred in Metal ores (by 4.3%).

In 2022, the value of sold production under subcontracting amounted to PLN 12,828.9 million and decreased compared to the previous year by 2.0%. In 2018, the value amounted to PLN 11,926.9 million and was lower by 7.6% compared to 2022. The divisions with the highest share of subcontracted production were: Food products, Beverages, Tobacco products (together 39.6%), Basic metals, Fabricated metal products (together 11.8%), Motor vehicles, trailers and semi-trailers (9.1%), Chemicals and chemical products (8.4%). In 2022, the largest value of sold production of products, as in previous years, was recorded in Mazowieckie – PLN 435,944.0 million, which accounted for 23.2% of share in the domestic value of sold production of products. The second voivodship with a significant share was Śląskie – PLN 274,709.4 million (14.6% of the total value), followed by Wielkopolskie – PLN 211,166.9 million (11.2%), Dolnośląskie – PLN 201,926.3 million (10.8%) and Małopolskie – PLN 122,673.7 million (6.5%). The lowest value of sold production was recorded for Świętokrzyskie – PLN 34,030.5 million.

In the analysed period, the share of total value of sold production reported by entities with 50 and more persons employed increased from 93.2% to 94.6%. In 2022 the value of sold production of products of large enterprises (50 and more persons employed) amounted to PLN 1,777,20.4 million, while for medium-sized enterprises (having 10–49 persons employed) – PLN 101,372.6 million

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 PKD: 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 2018–2022 increased from 96.2% to 96.6% and in 2022 amounted to PLN 1,815,438.5 million.

The value of sold production of products manufactured by non-industrial entities in 2022 was PLN 63,062.8 million. Non-industrial units reporting production of product were mainly classified in the sections: Wholesale and retail trade; Construction; Agriculture, forestry, hunting and fishing; Information and communication and Office administrative services activities, including support activities.

In terms of the value of sold production, from 2018 diesel oils remain on the first place. Whereas, on the second and the third place, as in the previous year, there were respectively: other parts and accessories for motor vehicles and lithium-ion batteries.

Sold production of products with embedded systems increased from PLN 9,723.0 million to PLN 32,205.0 million in 2022. The share of products with Internet of Things in the value of sold production of products with embedded systems was 35.5%. The production of products with embedded systems was dominated by entities with foreign capital, whose share amounted to 69.8% in 2022. The highest value of sold production in 2022 for products with embedded systems was recorded for entities with the primary kind of activity classified in Division 26 Manufacture of computers, electronic and optical products and Division 27 Manufacture of electrical equipment.

Manufactured production of products

In 2022, volume of production of measurement according to PRODPOL nomenclature was surveyed for 5 183 products and assortment groups, and for 4 103 of them, entities of national economy reported manufactured production.

In the years 2018–2022, production increased, among others, for: insecticides (by 317.0%), women's girls' suits and ensembles, knitted or crocheted (by 239.4%), bicycles for children (by 220.1%), cotton yarn (by 163.7%), cartons, boxes and cases, of corrugated paper or paperboard (by 158.7%), railway or tramway passenger wagons, self-propelled other than electrically powered (by 141.0%), non-alcoholic beer (by 120.4%), prepared meals and dishes based on meat (by 113.5%), glues based on natural rubber (by 109.7%), liquid cartridges for electronic cigarettes (by 97.6%), 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 96.0%), central heating boilers (by 93.3%), polyesters (other than polyesters, PET, epoxy resins, other unsaturated polyesters) (by 83.2%), radio receivers (by 79.4%), float glass (by 76.1%), mustard (by 76.1%), combine harvester-threshers (by 65.1%), folding cartons, boxes and cases of non-corrugated paper or paperboard (by 67.7%), sanitary towels (by 62.9%), tissues (by 62.2%), floor, wall or ceiling coverings of plastics (by 58.2%), prepared meals and dishes based on vegetables (by 58.1%), welded grill, netting and fencing (by 56.6%), light food cans of white tin-coated sheet of capacity less than 50 l (by 55.0%), multiple glazed units (by 54.8%), smoking tobacco (by 44.6%), nonwovens and non-woven products (by 44.5%), herbicides (by 41.7%), non-refractory clay roofing tiles (by 39.9%), fuses (by 38.9%), plates, sheet, film, foil and strip of cellular polymers of styrene (by 37.7%), men's or boys' suits and ensembles, knitted or crocheted (by 35.8%), fungicides (by 35.3%), adhesives based on cellulose derivatives (by 34.5%), premixtures for farm animal feeds (by 32.6%), steel tubes (by 29.7%), iron or steel reservoirs, tanks, vats and similar containers for gases, of a capacity > 300 litres (by 28.6%), air-cooled transformers (by 27.7%), household dishwashing machines (by 26.3%), power cables (by 23.2%), steel doors (by 21.6%), plastic bathtubs, shower-bath, wash-basins and sinks (by 16.1%), waterproof footwear (by 13.2%).

In the analysed period, a decrease in the production was recorded for: railway rolling stock carriages (by 80.0%), women's or girls' jackets, knitted or crocheted (by 73.9%), women's or girls' skirts and culottes of woven fabrics (by 71.6%), domestic food grinders, mixers and fruit or vegetable juice extractors (by 71.3%), men's suits of woven fabrics (by 69.3%), glazed ceramic flags and paving, hearth or wall tiles, with a face of > 90 cm² (by 68.4%), aluminium reservoirs, tanks, vats and similar containers (by 66.9%), women's dresses of woven fabrics (by 65.3%), women's dresses knitted or crocheted (by 65.2%), structural-wall clay hollow bricks (by 64.9%), gas cookers with an oven (by 63.3%), women's or girls' blouses, shirts and shirt-blouses (by 61.5%), footwear with leather uppers (by 60.1%), men's or boys' jackets and blazers of woven fabrics (by 58.2%), polyester textile filament yarn (by 53.6%), printed newspapers, appearing at least four times a week (by 53.0%), men's or boys' shirts (excluding knitted or crocheted) (by 51.8%), town footwear with rubber or plastic uppers (by 51.5%), woven fabrics of wool (by 44.7%), passenger cars (by 43.5%), toilet linen and kitchen linen products (by 42.6%), women's suits of woven fabrics (by 39.5%), blankets and travelling rugs (by 38.9%), footwear with textile uppers (by 38.3%), stainless steel sinks and wash basins (by 35.9%), women's trousers of woven fabrics (by 35.3%), sulphite wrapping paper and other uncoated paper (by 34.5%), anti-sprouting products and plant-growth regulators (by 33.5%), men's trousers of woven fabrics (by 33.4%), refractory bricks, blocks, tiles and similar refractory ceramic constructional goods (by 33.4%), women's or girls' jackets and blazers, of woven fabrics (by 33.1%), steel windows (by 32.7%), railway or tramway coaches, vans and trucks with electrically powered (by 32.6%), bed linen (by 31.7%), welded link chain of iron or steel (by 28.0%), radiators, not electrically heated, and parts thereof of steel (by 28.0%), polycarbonates (by 26.7%), yarn of combed wool or fine animal hair (by 26.6%), women's trousers knitted or crocheted (by 19.9%), household articles of enameled steel (by 19.6%).

In 2022, in comparison to 2021, manufactured production increased, for air conditioning machines with refrigeration unit (excluding those used in motor vehicles, self-contained or split-systems machines) (by 117.4%), self-propelled bulldozers and angledozers (by 101.6%), generating sets with internal combustion piston engines (by 80.7%), mustard (by 76.1%), iron or steel reservoirs, tanks, vats and similar containers for gases, of a capacity > 300 litres (by 72.4%), men's or boys' overcoats and other similar articles,

not knitted (by 68.3%), pulley tackle and hoists powered by an electric motor (by 57.0%), women's or girls' suits and ensembles, knitted or crocheted (by 51.1%), butadiene – 1,3 (by 49.5%), woven fabrics of carded wool or carded fine animal hair (by 48.1%), reciprocating displacement compressors (by 47.8%), men's or boys' shirts, knitted or crocheted (by 43.7%), non-wired sheets of cast or rolled glass, reflecting or non-reflecting layer, but not otherwise worked (by 43.4%), light food cans of white tin-coated sheet of capacity less than 50 l (by 41.6%), table candles (by 38.6%), p-xylene (by 38.0%), sanitary towels, tampons and similar articles of paper (by 33.4%), smoking tobacco (by 32.0%), ethylene (by 31.7%), aeroplanes for civil use (by 31.6%), polyethylene (by 30.6%), lorries (by 30.5%), moulding sand (by 28.6%), domestic heaters for gas or for both gas and other fuel (by 28.0%), rail wagons (by 26.3%), tableware and kitchenware of wood (by 25.6%), internal combustion piston engines for the vehicles (by 25.2%), town footwear with rubber or plastic uppers (by 23.9%), burglar or fire alarms (by 23.8%), yarn of artificial staple fibres, not packaged for retail sale (by 23.7%), polyvinyl chloride (by 22.8%), fixed resistors (by 21.1%), luggage, handbags and similar leather goods (by 20.3%), direct current motors and generators (by 19.2%).

Decrease of production in 2022 in comparison to the previous year was recorded, among others, for: matches (by 82.6%), domestic food grinders, mixers and fruit or vegetable juice extractors (by 76.4%), light bulbs for general use (by 72.1%), articles of bedding of feathers or down, including quilts and eiderdowns, cushions, pouffes, pillows, excluding mattresses, sleeping bags (by 71.0%), glycerol (by 60.8%), gas stoves with oven (by 58.7%), front-end shovel loaders (excl. specially designed for underground use) (by 55.3%), women's or girls' jackets and blazers, knitted or crocheted (by 52.2%), electric bakery and biscuit ovens (by 50.2%), cash registers (by 49.4%), ploughs (by 47.9%), industrial machinery for the manufacture or preparation of sugar (by 47.7%), acetic acid (by 47.3%), butanol (by 46.4%), essential oils (by 44.3%), gas-electric cookers (by 35.6%), household vacuum cleaners (by 35.2%), radio receivers (by 35.1%), passenger cars with engine of cylinder capacity 1001-1500 cm³ (by 34.9%), pig meat, frozen (by 32.2%), women's or girls' dresses, skirts and culottes not knitted or crocheted (by 31.9%), hand-bags of leather (by 31.8%), radiators, not electrically heated, and parts thereof of steel (by 30.1%), rubberized textile fabrics, except tyre cord fabric (by 29.7%), wooden furniture of a kind used in offices (by 27.6%), toilet and kitchen linen (by 27.7%), stainless steel sinks and wash basins (by 27.2%), flooring materials of coniferous wood (by 27.1%), rigid tubes, pipes and hoses of polymers of vinyl chloride (by 23.3%), plastic wash-basins (by 22.8%), furniture of plastics (by 22.7%), electricity meters (by 22.0%), footwear with leather uppers (by 21.7%), plastic bathtubs (by 20.7%), rails of iron or steel for railway track (by 19.9%), unsplit bovine leather for shoes (by 18.6%), particle board of wood (by 17.7%), zinc coated sheets (by 16.9%), trailers and semi-trailers for the transport of goods (by 16.2%), panty hose and tights (by 15.4%), containers (by 15.3%), upholstered seats with wooden frames (by 13.8%), peat (by 13.4%), crude steel (by 12.1%), light fuel oils (by 11.6%).

Production of industrial products compared to other European Union countries

In 2022, Poland was in 5th place, after Germany, France, Italy and Spain, in terms of the number of PRODCOM headings for which sold production on own account was reported. Poland submitted data for 3 076 products and product assortment groups, which accounted for 77.9% of all headings.

Poland had significant share (above 20%) in the value of production sold in the European Union in 2022, for 243 products, e.g. television receivers (64.5%), cloth washing and drying machines, of the household type (46.1%), combined refrigerators-freezers (44.7%), candles (39.6%), apple juice (36.9%), silver (31.3%), airbags with inflator system and parts thereof (28.8%), motor vehicles for the transport of 10 or more persons (25.2%), smoking tobacco (excluding excise duty on tobacco) (23.3%), laminated safety glass, suitable for incorporation in vehicles (22.7%), fresh or chilled cuts of turkey (20.8%).

In 2022, for 340 products the share of Poland in the volume of sold production in the European Union was in 10%–20% range. The largest numbers of such products were classified to the following divisions: Food products – 63 products, Chemicals and chemical products – 33, Machinery and equipment – 29, Rubber and plastic products – 29, Basic metals – 27, Fabricated metal products – 25, Electrical equipment – 20, Other non-metallic mineral products – 19.

For 286 products the share was more than 20% of sold production volume and for 73 the share exceeded 50%, among others for television receivers, household dishwashing machines and medium density fibre-board (MDF), of a thickness not exceeding 5 mm.

Chapter 1.

Sold production of industrial products

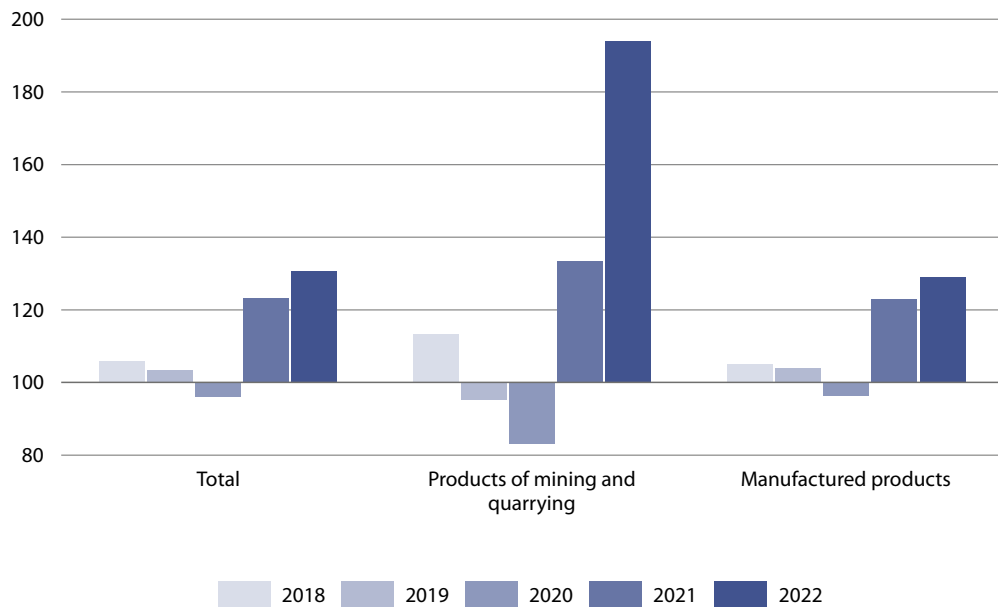
Sold production of industry products is the volume and value of goods sold outside the enterprise during reporting period, manufactured as own production or made by subcontracting in other unit from materials provided by the enterprise, regardless of the time of their production.

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 2022, the value of production sold at current prices amounted to PLN 1,878,501,328.2 thousand and was higher than the year before by 30.7%, and compared to 2018 – by 59.8%.

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

1.1. Sold production of industrial products by divisions and groups of PKWiU

In 2022, in comparison to 2018, the value of sold production of products increased in 25 divisions, among others in divisions Electrical equipment (by 112.9%), Coke, briquette and refined petroleum products (by 97.0%), Chemicals and chemical products (by 83.5%), Basic metals (by 69.8%), Wood and products of wood, cork and straw (by 67.6%), Hard coal and lignite (by 67.2%), Paper and paper products (by 63.5%), Other manufactured goods (by 62.1%), Food products (by 58.5%), Fabricated metal products (by 56.4%), Computers, electronic and optical products (by 55.8%), Rubber and plastic products (by 54.3%), Other transport equipment (by 53.9%), Machinery and equipment (by 51.0%), Other non-metallic mineral products (by 49.2%), Pharmaceutical products and preparations (by 36.4%), Textiles (by 33.4%), Beverages (by 31.3%), Furniture (by 27.0%), Motor vehicles, trailers and semi-trailers (by 26.6%), Other products of mining and quarrying (by 26.0%), Printing services and reproduction services of recorded media (by 13.0%), Wearing apparel (by 2.9%), Tobacco products (by 1.9%). A decrease of the value of sold production of products in comparison to 2018, was recorded in division Leather and related products (by 17.2%).

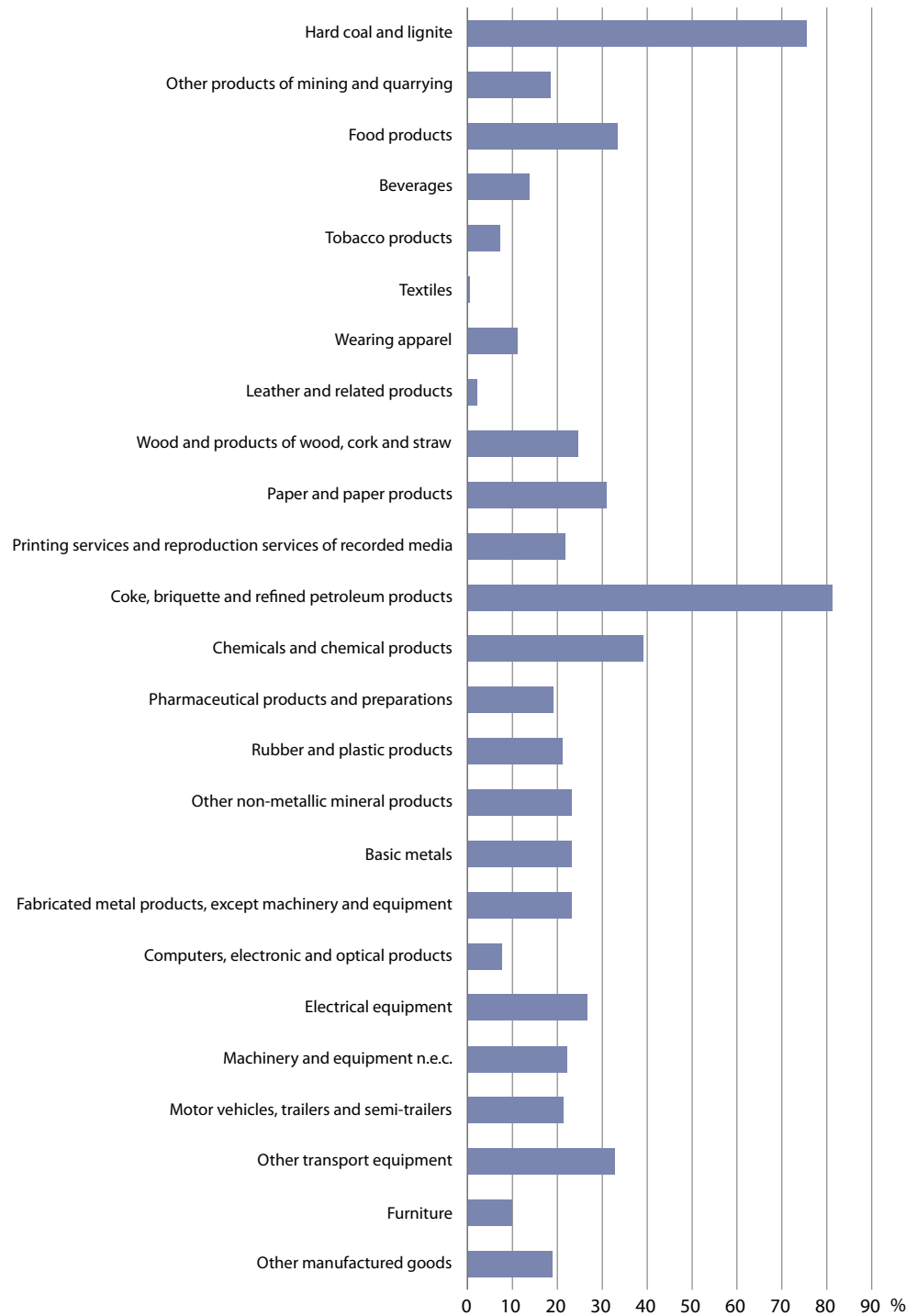
Table 1. Sold production of products by selected PKWiU divisions

Specification	2018	2019	2020	2021	2022	
	in million PLN					2018=100
Total	1 175 330.6	1 215 732.4	1 167 361.8	1 437 681.0	1 878 501.3	159.8
Products of mining and quarrying	36 234.5	34 531.8	28 667.2	38 221.2	74 104.6	204.5
of which						
Hard coal and lignite	22 396.0	21 387.6	17 341.7	21 339.7	37 455.4	167.2
Other products of mining and quarrying	6 901.4	6 895.1	6 625.2	7 342.3	8 698.3	126.0
Manufactured products	1 139 096.1	1 181 200.7	1 138 694.7	1 399 459.8	1 804 396.8	158.4
Food products	196 479.1	203 527.1	208 714.1	233 397.8	311 437.0	158.5
Beverages	31 495.1	33 374.2	33 169.2	36 371.0	41 352.5	131.3
Tobacco products	18 155.0	17 923.6	17 777.7	17 248.2	18 502.8	101.9
Textiles	8 350.6	9 373.9	9 645.1	11 087.5	11 141.4	133.4
Wearing apparel	5 008.8	5 281.7	4 333.3	4 634.4	5 151.6	102.9
Leather and related products	3 723.7	3 552.4	2 901.5	3 016.3	3 083.3	82.8
Wood and products of wood, cork and straw	28 360.7	28 338.4	28 539.8	38 154.9	47 536.7	167.6
Paper and paper products	42 342.3	43 515.4	42 653.9	52 888.8	69 249.9	163.5
Printing services and reproduction services of recorded media	7 809.4	7 889.2	7 092.5	7 253.5	8 826.1	113.0
Coke, briquette and refined petroleum products	98 879.4	99 624.2	74 895.8	107 455.1	194 825.9	197.0
Chemicals and chemical products	67 425.1	69 993.9	68 419.9	88 897.5	123 713.3	183.5
Pharmaceutical products and preparations	10 492.2	10 865.5	11 418.1	12 020.1	14 314.6	136.4
Rubber and plastic products	83 111.2	84 751.2	84 820.0	105 877.3	128 224.7	154.3
Other non-metallic mineral products	49 653.7	53 011.7	52 570.9	60 140.9	74 107.5	149.2
Basic metals	74 335.7	72 292.8	68 947.9	102 568.7	126 237.9	169.8
Fabricated metal products	66 853.3	68 672.8	68 410.9	84 891.0	104 584.3	156.4
Computers, electronic and optical products	33 005.0	34 441.0	36 395.2	47 783.0	51 408.9	155.8
Electrical equipment	63 321.5	71 607.9	81 804.0	106 365.7	134 798.1	212.9
Machinery and equipment	44 893.3	47 985.9	44 896.8	55 473.3	67 795.6	151.0
Motor vehicles, trailers and semi-trailers	136 471.3	141 442.3	120 690.5	142 369.6	172 824.8	126.6
Other transport equipment	16 755.9	20 287.2	18 940.3	19 418.9	25 782.4	153.9
Furniture	42 871.7	43 649.9	41 830.6	49 474.5	54 428.4	127.0
Other manufactured goods	9 297.1	9 828.6	9 826.6	12 672.0	15 069.1	162.1

In 2022, compared to the previous year, the value of sold production of products increased in most divisions, among others Crude petroleum and natural gas (by 196.0%), Coke, briquette and refined petroleum products (by 81.3%), Hard coal and lignite (by 75.5%), Chemicals and chemical products (by 39.2%), Food products (by 33.4%), Other transport equipment (by 32.8%), Paper and paper products (by 30.9%), Electrical equipment (by 26.7%), Wood and products of wood, cork and straw (by 24.6%), Other non-metallic mineral products (by 23.2%), Fabricated metal products, excluding machinery and equipment (by 23.2%), Basic metals (by 23.1%), Machinery and equipment n.e.c. (by 22.2%), Printing services and reproduction services of recorded media (by 21.7%), Motor vehicles, trailers and semi-trailers (by 21.4%), Rubber

and plastic products (by 21.1%), Pharmaceutical products and preparations (by 19.1%), Other manufactured goods (by 18.9%). A decrease of the value of sold production of products in comparison to 2021, was noted in division Metal ores (by 4.3%).

Chart 2. Change in value of sold production of industrial products by PKWiU divisions in 2022 (previous year=100)

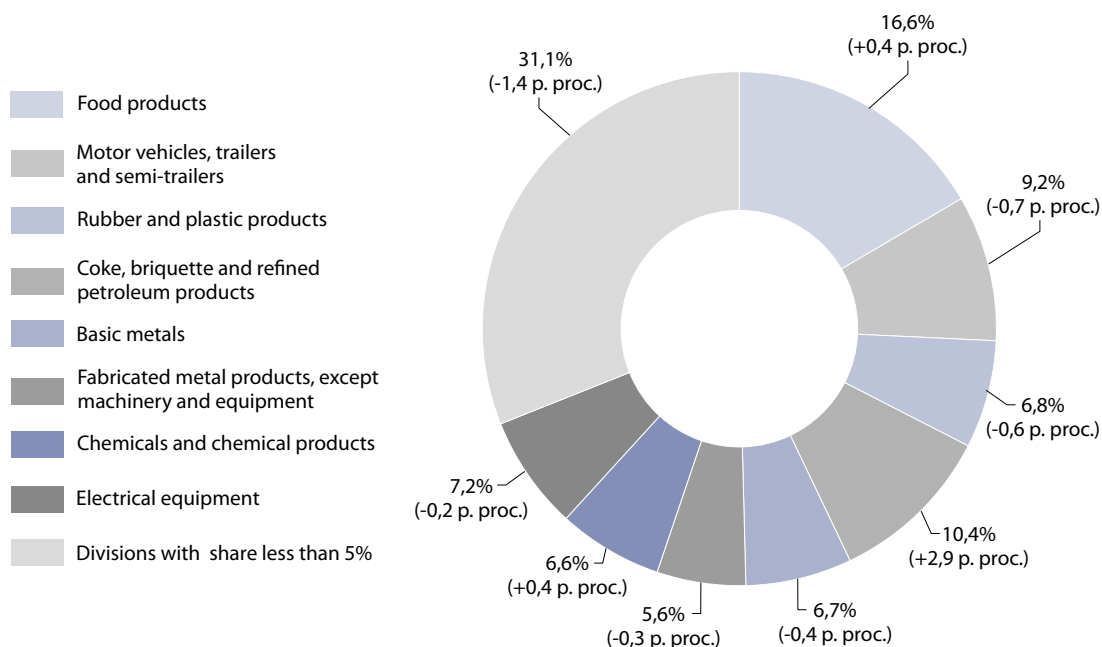


In 2022, the largest share in the value of sold production of products had divisions: Food products – 16.6%, Coke, briquette and refined petroleum products – 10.4%, Motor vehicles, trailers and semi-trailers – 9.2%, Electrical equipment – 7.2%, Rubber and plastic products – 6.8%, Basic metals – 6.7%, Chemicals and chemical products – 6.6%, Fabricated metal products – 5.6%. The lowest share in the value of sold production had divisions: Wearing apparel, Leather and related products, Metal ores.

In comparison to 2021 the share in the sold production of products increased the most in divisions Coke, briquette and refined petroleum products (by 2.9 p.p.) and Crude petroleum and natural gas (by 0.8 p.p.) and it fell the most in divisions Motor vehicles, trailers and semi-trailers (by 0.7 p.p.), Rubber and plastic products and Computers, electronic and optical products (by 0.6 p.p.).

In comparison to 2018 the most increased the share of divisions Coke, briquette and refined petroleum products (by 2.0 p.p.), Electrical equipment (by 1.8 p.p.), Crude petroleum and natural gas (by 1.0 p.p.), Chemicals and chemical products (by 0.9 p.p.) and Basic metals (by 0.4 p.p.). The largest decline in share was recorded for divisions: Motor vehicles, trailers and semi-trailers (by 2.4 p.p.), Furniture (by 0.7 p.p.), Beverages and Tobacco products (by 0.5 p.p.), Rubber and plastic products and Other non-metallic mineral products (by 0.3 p.p.).

Chart 3. Structure of value of sold production of products by PKWiU divisions in 2022 and its change (previous year=100)



The division with the highest share in the value of total sold production of products in 2022 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 Dairy products (16.8%) and Other food products (14.5%). The smallest share in sales was recorded for Vegetable and animal oils and fats (4.4%). In division Coke, briquettes and refined petroleum products, dominated the group Briquettes and similar solid fuels from coal and peat and refined petroleum products with a share of 91.7%. The share of the group Coke oven products was 8.3% and decreased by 1.1 p.p. compared to the previous year. The third dominant division in terms of the volume of sold production was the division Motor vehicles, trailers and semi-trailers division, in which the largest share had groups Parts and accessories for motor vehicle (55.2%) and Motor vehicles, excluding motorcycles (38.4%), while the smallest share in this division had group Bodies (coachwork) for motor vehicles, trailers and semi-trailers – 6.3%.

Table 2. Groups with the largest share in value of sold production of products by PKWiU divisions in 2022

Specification – Divisions	Specification – Groups	Share of group in division in %
Hard coal and lignite	Hard coal	98.4
Other products of mining and quarrying	Stone, sand and clay	84.5
Food products	Preserved meat and meat products	31.3
Beverages	Beverages	100.0
Tobacco products	Tobacco products	100.0
Textiles	Other textiles	85.3
Wearing apparel	Wearing apparel, except fur apparel	86.7
Leather and related products	Tanned and dressed leather; luggage, handbags, saddlery and harness; dressed and dyed fur	51.4
Wood and products of wood, cork and straw	Products of wood, cork, straw and plaiting materials	84.7
Paper and paper products	Articles of paper and paperboard	66.5
Printing services and reproduction services of recorded media	Printing services and services related to printing	100.0
Coke, briquette and refined petroleum products	Briquette and similar solid fuels from coal and peat, refined petroleum products	91.7
Chemicals and chemical products	Basic chemicals, fertilisers and nitrogen compounds, plastics and synthetic rubber in primary forms	64.1
Pharmaceutical products and preparations	Pharmaceutical preparations	95.0
Rubber and plastic products	Plastics products	80.8
Other non-metallic mineral products	Products of concrete, cement and plaster	31.1
Basic metals	Basic precious and other non-ferrous metals structural metal products	41.0
Fabricated metal products	Structural metal products	39.4
Computers, electronic and optical products	Consumer electronics	56.0
Electrical equipment	Batteries and accumulators	34.7
Machinery and equipment	Other general-purpose machinery	33.4
Motor vehicles, trailers and semi-trailers	Parts and accessories for motor vehicles	55.2
Other transport equipment	Railway locomotives and rolling stock	35.5
Furniture	Furniture	100.0
Other manufactured goods	Goods not elsewhere classified	44.2

Among most divisions covered by the survey of industrial products, one group of products clearly dominated, e.g. in the division Pharmaceutical products and medicines the group Medicines and other pharmaceutical products with a share of 95.0% of the value of sold production, or in the division Rubber and plastic products – Plastic products (share of 80.8% in the value of 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 used and raw materials for production. In 2022, these included: Railway locomotives and rolling stock (share of 35.5% in the division Other transport equipment), Batteries and accumulators (share of 34.7% in the division Electrical equipment), Other general-purpose machines (share of 33.4% in the division Machinery and equipment) or Products made of concrete, cement and plaster (share of 31.1% in the division Products made of other non-metallic mineral raw materials).

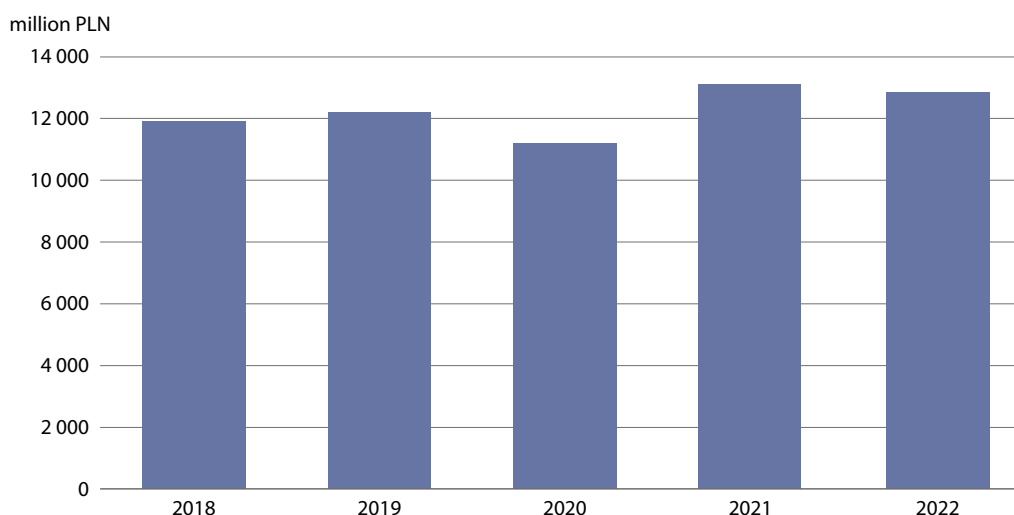
1.2. Production under sub-contracted operations

Production under sub-contracted (sub-contracted production service) 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 can 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 amounted to PLN 12,827.9 million in 2022, down by 2.0% on 2021, when it was recorded at its highest level in the entire period under review. The decrease in production under sub-contracting at the national level was mainly influenced by declines in the divisions: Basic metals (by 87.5%), Other transport equipment (by 86.0%), Pharmaceutical products and preparations (by 50.2%), Other manufactured goods (by 13.8%), and Tobacco products (by 10.5%).

Chart 4. Sold production under sub-contracted operations



In 2022, the largest share of the value of production under sub-contracting was recorded for the Food and Tobacco industry (39.6%), comprising the Food, Beverages and Tobacco Products divisions, as well as the Basic metals and Fabricated metal products divisions (11.8% in total). The marginal importance of production under sub-contracted operations was recorded in the divisions: Coke, briquettes and refined petroleum products, Other non-metallic mineral products, Wood and products of wood, cork, except furniture; articles of straw and plaiting materials, Leather and related products and Furniture.

Table 3. Sold production under sub-contracted operations

Specification	2022	
	thousand PLN	in %
Manufactured products	12 827 882.5	100.0
Food products, Beverages, Tobacco products	5 081 517.6	39.6
Textiles	579 519.2	4.5
Wearing apparel	663 972.4	5.2
Leather and related products	78 550.0	0.6
Wood and products of wood, cork and straw	33 736.2	0.3
Paper and paper products	459 588.2	3.6
Printing services and reproduction services of recorded media	555 036.6	4.3
Coke, briquette and refined petroleum products	1 436.7	0.0
Chemicals and chemical products	1 075 389.9	8.4
Pharmaceutical products and preparations	197 982.2	1.5
Rubber and plastic products	139 319.1	1.1
Other non-metallic mineral products	24 164.4	0.2
Basic metals, Fabricated metal products	1 516 442.1	11.8
Computers, electronic and optical products	330 551.5	2.6
Electrical equipment	397 934.9	3.1
Machinery and equipment	126 897.9	1.0
Motor vehicles, trailers and semi-trailers	1 161 404.3	9.1
Other transport equipment	111 838.4	0.9
Furniture	76 538.9	0.6
Other manufactured goods	156 359.2	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 88 products or product assortment groups, out of the 146 covered by the survey, were reported to be manufactured to order from outsourced material in addition to own-account production (60.3%). In the division Printing services and reproduction services of recorded media, this was 55.6%, and in the division Furniture it was 32.5%. Although as many as 78 under sub-contracted products were reported in the division Food products, they accounted for only 17.9% of all food products under observation.

Table 4. Production of selected food products

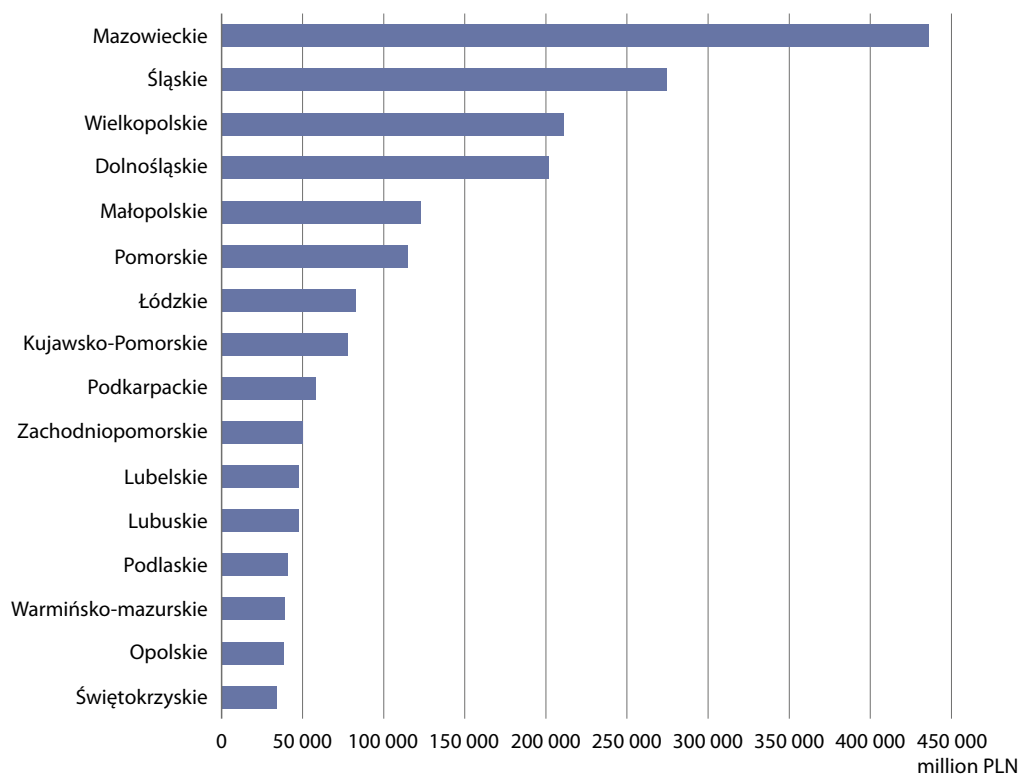
Specification	Unit	Actual production	Sold production	
			on own account	under sub-contracted operations
Molluscs frozen, dried, salted or in brine	kg	23 710	11 500	15 210
Roasted coffee, not decaffeinated	tonnes	90 741	32 504	58 085
Prepared or preserved salmon, whole or in pieces	tonnes	11 567	6 134	5 480
Crisps	tonnes	128 665	63 934	55 304
Savoury or salted extruded or expanded products	tonnes	200 436	113 773	85 511
Tea in immediate packings of a content 3 kg and less	tonnes	38 464	23 280	15 667
Crustaceans frozen, dried, salted or in brine	kg	163 822	102 520	61 302
Soups and broths and preparations therefor	tonnes	95 705	59 153	33 777
Prepared or preserved pork meat: hams and cuts thereof	tonnes	73 620	45 400	25 529
Sugar confectionery, n.e.c.	tonnes	57 233	37 714	19 213
Other sugars (including invert sugar) n.e.c.	tonnes	7 743	5 756	1 994

1.3. Sold production of industrial products by voivodships

In 2022, the highest value of sold production of products, as in previous years, was recorded in Mazowieckie Voivodship – PLN 435,944.0 million, which accounted for 23.2% of the share in the national value of sold production of products. Such a large share is due to the fact that it is the seat of the management boards of many manufacturers of products operating in Poland¹. The second Voivodship with a significant share was Śląskie Voivodship – PLN 274,709.4 million (14.6% of the total value), followed by Wielkopolskie Voivodship – PLN 211,166.9 million (11.2%), Dolnośląskie Voivodship – PLN 201,929.3 million (10.8%) and Małopolskie Voivodship – PLN 122,673.7 million (6.5%). The lowest value of sold production was recorded for Świętokrzyskie Voivodship – PLN 34,030.5 million.

In the years 2018–2022, the share of most voivodships in the value of sold production of industrial products changed slightly (from 0.1 p.p. to 0.4 p.p. year on the previous year) or remained at a similar level. In 2022, compared to 2021, the largest change in the share in the value of sold production was recorded for Mazowieckie Voivodship (increase by 2.4 p.p.) and Wielkopolskie Voivodship (decrease by 0.8 p.p.). In 2022, compared to 2018, there was a change of more than 0.4 p.p. in four Voivodships, including an increase in Mazowieckie (by 3.4 p.p.) and Dolnośląskie (by 2.1 p.p.). Significant decreases were recorded in Śląskie Voivodship (by 1.9 p.p.) and Wielkopolskie Voivodship (by 1.6 p.p.).

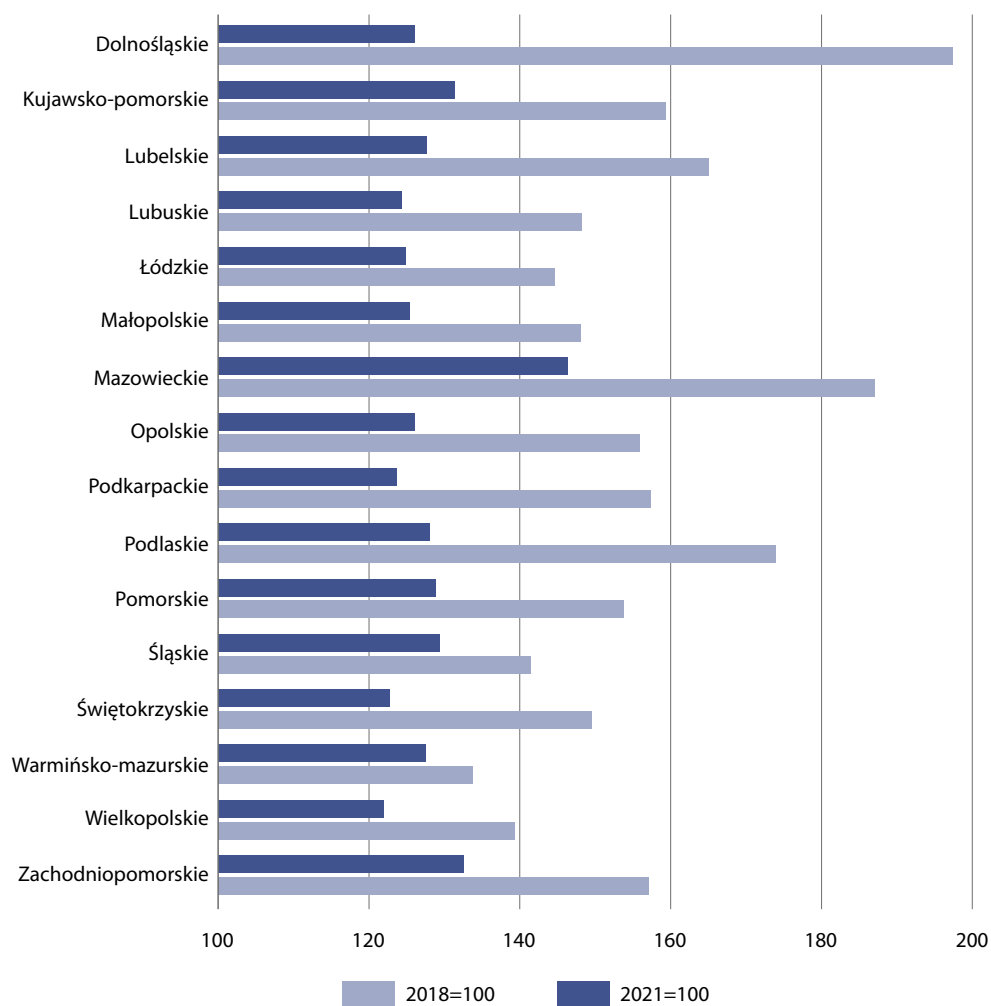
¹ The data is collected according to the subjective method, i.e. according to the company's headquarters.

Chart 5. Sold production of industrial products by voivodships in 2022**Table 5. Sold production of industrial products by voivodships**

Voivodship	2018	2019	2020	2021	2022
	in %				
Dolnośląskie	8.7	9.3	10.4	11.2	10.8
Kujawsko-pomorskie	4.2	4.1	4.4	4.1	4.2
Lubelskie	2.5	2.6	2.6	2.6	2.5
Lubuskie	2.7	2.7	2.7	2.7	2.5
Łódzkie	4.9	4.6	4.7	4.6	4.4
Małopolskie	7.0	7.0	6.7	6.8	6.5
Mazowieckie	19.8	20.4	20.6	20.7	23.2
Opolskie	2.1	2.1	2.1	2.1	2.0
Podkarpackie	3.2	3.3	3.2	3.3	3.1
Podlaskie	2.0	2.1	2.3	2.2	2.2
Pomorskie	6.4	6.3	6.0	6.2	6.1
Śląskie	16.5	15.8	14.5	14.8	14.6
Świętokrzyskie	1.9	2.0	2.0	1.9	1.8
Warmińsko-mazurskie	2.5	2.5	2.1	2.1	2.1
Wielkopolskie	12.9	12.6	12.8	12.1	11.3
Zachodniopomorskie	2.7	2.6	2.9	2.6	2.7

In 2022, enterprises from Mazowieckie Voivodship had the largest share in the value of sold production at the country level in the following divisions: Crude oil and natural gas; Coke, briquettes and refined petroleum products; 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 played a leading role in the production of the following divisions: Hard coal and lignite; Basic metals; Motor vehicles, trailers and semi-trailers; Rubber and plastic products, Fabricated metal products; Other non-metallic mineral products. Wielkopolskie Voivodship had the largest share in the value of sold production of products in the following divisions: Furniture; Beverages; Textile products; Other products. In Dolnośląskie Voivodship, the largest share in the value of total sold production was recorded in Electrical equipment and Leather and related products; in Małopolskie Voivodship – Metal ores and Tobacco products; in Kujawsko-Pomorskie Voivodship – Paper and paper products; in Łódzkie Voivodship – Wearing apparel; in Podkarpackie Voivodship – Other transport equipment; in Świętokrzyskie Voivodship – Other products of mining and quarrying; in Zachodniopomorskie Voivodship – Wood and products of wood, cork and straw.

Chart 6. Dynamics of sold production of industrial products by voivodships (2018=100; 2021 =100) in 2022



Dynamics calculated on the basis of value of sold production.

In 2022, compared to 2018, increase in the value of sold production was recorded in all Voivodships. The highest increase in sold production was recorded for Dolnośląskie Voivodship (by 97.4%), Mazowieckie Voivodship (by 87.0%), Podlaskie Voivodship (by 74.0%), Podkarpackie Voivodship (by 57.4%), Opolskie Voivodship (by 55.9%). The least increase in sold production was in the Warmińsko-mazurskie Voivodship (by 33.8%) and Wielkopolskie Voivodship (by 39.3%). Compared to 2021, the increase in sold production was recorded in all Voivodships, the largest in the Mazowieckie Voivodship (by 46.4%), Zachodniopomorskie Voivodship (by 32.5%) and Kujawsko-Pomorskie Voivodship (by 31.4%).

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

Business entities with 10 and more persons employed participate in the survey of the production of industrial products, activity of these entities results in production of industrial products classified to two PKWiU sections: Mining and quarrying products and Manufactured products. In 2018–2022, the share of the value of sold production of products, reported by enterprises employing 50 or more people (large entities), increased in total value from 93.2% to 94.6%. In 2022, the value total sold production of products of large enterprises amounted to PLN 1,777,120.4 million, while enterprises with 10–49 employees (medium entities) – PLN 101,372.6 million. During the analysed period, only in 2020, both the Mining and quarrying products and Manufactured Products sections recorded a decrease in production in both entity size classes. This decrease was caused by production stoppages due to the COVID-19 pandemic. From 2021 onwards, a rise in the value of sold production was observed again, both among entities with 50 or more persons employed and those with 49–10 persons employed.

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

Specification	2018	2019	2020	2021	2022
	in million PLN				
TOTAL					
entities with 50 and more persons employed	1 095 457.6	1 136 549.0	1 093 303.0	1 352 434.2	1 777 120.4
entities with 10–49 persons employed	79 873.0	79 183.4	74 058.9	85 246.7	101 372.6
PRODUCTS OF MINING AND QUARRYING					
entities with 50 and more persons employed	35 185.8	33 362.3	27 615.3	37 062.1	72 751.1
entities with 10–49 persons employed	1 048.7	1 169.5	1 051.9	1 159.1	1 353.5
MANUFACTURED PRODUCTS					
entities with 50 and more persons employed	1 060 271.8	1 103 186.8	1 065 687.7	1 315 372.1	1 704 369.4
entities with 10–49 persons employed	78 824.3	78 013.9	73 007.0	84 087.7	100 019.1

In 2022, the largest share of production of large enterprises was recorded in the following divisions: Tobacco products, Hard coal and lignite (99.8%), Coke, briquette and refined petroleum products (99.8%), Motor vehicles, trailers and semi-trailers (98.8%), Pharmaceutical products and preparations (98.6%), Metal ores, Crude petroleum and natural gas. The largest share of medium-sized entities with 10–49 persons employed in 2022 recorded in the divisions: Wearing apparel (28.2%), Textiles (16.1%), Leather and related products (15.7%), Printing services and reproduction services of recorded media (15.2%), Wood and products of wood, cork and straw (15.2%), Other products of mining and quarrying (14.4%), Other manufactured goods (12.0%), Fabricated metal products (11.6%).

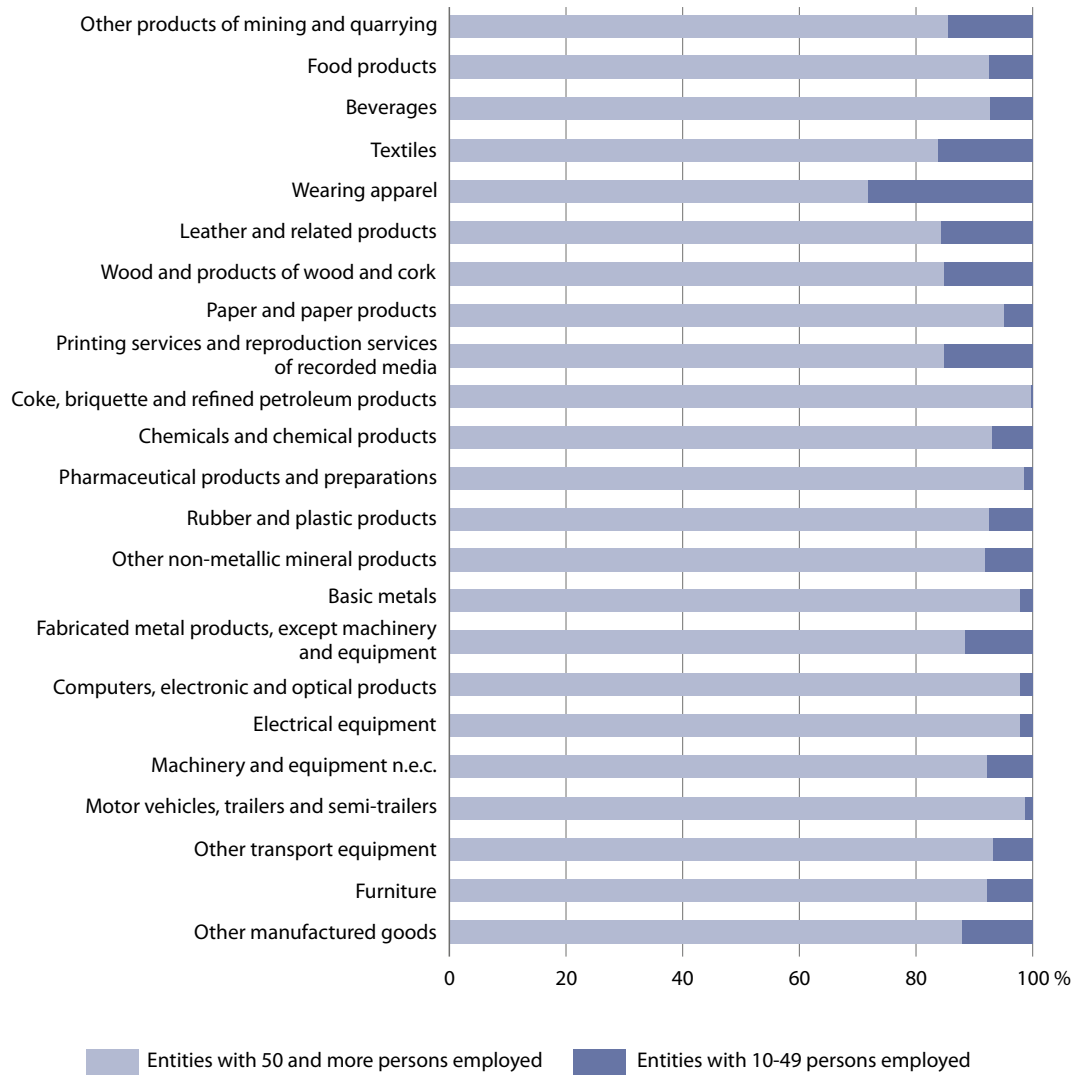
Table 7. Share of entities with 50 and more persons employed in value of sold production of products by PKWiU divisions

Specification	2018	2019	2020	2021	2022
	in %				
Total	93.2	93.5	93.7	94.1	94.6
Hard coal and lignite	99.8	99.9	99.7	99.8	99.8
Other products of mining and quarrying	85.4	83.5	85.0	85.0	85.6
Food products	90.4	91.0	91.1	92.3	92.6
Beverages	92.8	93.5	93.5	93.4	92.8
Tobacco products	99.7	99.8	99.8	99.9	.
Textiles	83.9	84.7	82.1	85.5	83.9
Wearing apparel	70.0	66.3	69.0	69.7	71.8
Leather and related products	81.8	83.6	85.6	83.3	84.3
Wood and products of wood, cork and straw	82.2	83.4	84.4	84.7	84.8
Paper and paper products	94.0	93.4	94.5	95.1	95.1
Printing services and reproduction services of recorded media	82.1	81.9	83.2	83.3	84.8
Coke, briquette and refined petroleum products	99.2	99.7	99.7	99.6	99.8
Chemicals and chemical products	93.1	92.8	92.7	92.5	93.1
Pharmaceutical products and preparations	98.2	98.2	98.4	98.1	98.6
Rubber and plastic products	91.6	91.9	92.1	92.3	92.6
Other non-metallic mineral products	90.9	91.2	91.5	91.7	91.9
Basic metals	97.0	96.5	97.1	97.3	97.9
Fabricated metal products	85.4	85.9	87.4	87.1	88.4
Computers, electronic and optical products	96.9	96.9	97.6	98.0	97.9
Electrical equipment	96.9	97.0	97.7	97.7	97.9
Machinery and equipment	90.2	91.0	91.8	92.1	92.3
Motor vehicles, trailers and semi-trailers	98.9	98.8	98.8	98.6	98.8
Other transport equipment	91.9	92.6	92.3	92.9	93.2
Furniture	89.5	91.6	92.3	92.2	92.3
Other manufactured goods	86.8	87.0	88.8	89.5	88.0

In 2022, compared to 2021, a decrease in the share of entities employing 50 or more people in the value of sold production of products was recorded for the following divisions: Textiles (by 1.6 p.p.), Other manufactured goods (by 1.5 p.p.), Beverages (by 0.6 p.p.), Computers, electronic and optical products (by 0.1 p.p.). In 19 divisions, there was a slight increase in the share of sold production of entities employing 50 or more people, e.g. Wearing apparel (by 2.1 p.p.), Printing services and reproduction services of recorded media (by 1.5 p.p.), Fabricated metal products (by 1.3 p.p.), Leather and related products (by 1.0 p.p.).

Compared to 2018, the share of large entities in the sold production of products decreased only in the division Motor vehicles, trailers and semi-trailers (by 0.1 p.p.). Throughout the analysed period, the greatest increase in the share of entities employing 50 persons or more was recorded in divisions: Fabricated metal products (by 3.0 p.p.), Furniture (by 2.8 p.p.), Printing services and reproduction services of recorded media (by 2.7 p.p.), Wood and products of wood, cork and straw (by 2.6 p.p.), Food products (by 2.2 p.p.).

Chart 7. Sold production by size classes and PKWiU divisions in 2022



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

Industrial entities are business 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 business 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 section Mining and quarrying and Manufactured products are mainly produced by industrial entities. In 2018–2022, the value of sold production of products increased by 60.6% in the case of industrial entities and by 41.0% in the case of non-industrial entities.

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

Specification	2018	2019	2020	2021	2022
	in thousand PLN				
TOTAL					
Industrial entities	1 130 590 468.3	1 169 425 932.8	1 119 336 987.4	1 377 393 941.7	1 815 438 538.8
Non-industrial entities	44 740 154.7	46 306 504.8	48 024 857.6	60 287 014.0	63 062 789.4
PRODUCTS OF MINING AND QUARRYING					
Industrial entities	35 985 073.7	34 263 376.0	28 436 882.6	37 958 967.2	73 897 675.1
Non-industrial entities	249 425.6	268 380.1	230 287.4	262 215.7	206 890.1
MANUFACTURED PRODUCTS					
Industrial entities	1 094 605 394.6	1 135 162 556.8	1 090 900 104.8	1 339 434 974.5	1 741 540 863.7
Non-industrial entities	44 490 729.1	46 038 124.7	47 794 570.2	60 024 798.3	62 855 899.3

In 2022, the value of sold production of products manufactured by non-industrial entities was PLN 63,062.8 million, of which 97.7% 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 Administrative services and support service activities (section N).

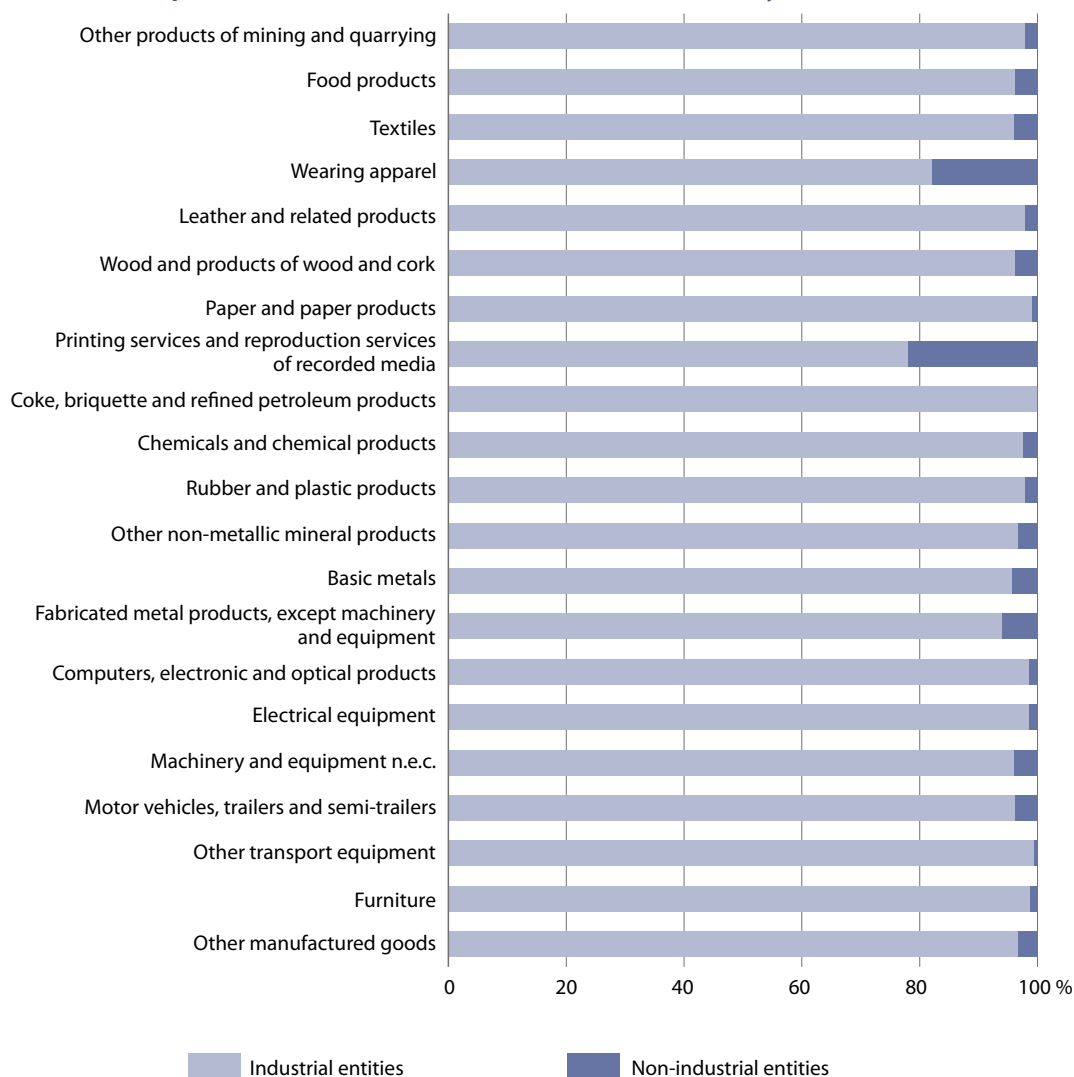
Over 76.7% of sold production was reported by entities whose activities were classified in the Wholesale and retail trade section. Entities belonging to this section generated the highest income from the sale of products, among others in the following sections: Tobacco products, Food products and Basic metals, 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 2.3% of sold production of non-industrial entities was mainly from the following sections: Public administration and defence; compulsory social security (section O), Transportation and storage (section H), Arts, entertainment and recreation activities (section R), Accommodation and food service activities (section I), Households as employers; goods- and services-producing activities of households for own use (section T), whose share ranged from 0.6% to 0.3%.

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

PKD Sections	2022	
	in thousand PLN	in %
Non-industrial entities	63 062 789.4	100.0
of which entities classified to sections:		
Wholesale and retail trade	48 375 974.9	76.7
Construction	6 469 902.4	10.3
Agriculture, forestry, hunting and fishing	3 043 628.8	4.8
Information and communication services	2 131 630.8	3.4
Administrative and support service activities	1 579 132.1	2.5

In 2022, the largest share of non-industrial entities in the sold production of products was recorded for the following divisions: Tobacco products, Printing services and reproduction services of recorded media (21.9%), Wearing apparel (17.9%), Mining of metal ores, Fabricated metal products (6.0%), Beverages, Basic metals (4.4%) and Textiles (4.0%).

Chart 8. Structure of sold production of industrial and non-industrial entities by PKWiU divisions in 2022

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, Other transport equipment, Pharmaceutical products and preparations, Leather and related products, Other non-metallic mineral products, Paper and paper 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 primary 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 primary activity of entities in 2022 can be found in Annex 1.

1.6. Sold production of major industrial products

In 2022, as in previous years, diesel oils took the leading place in the group of 10 products 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 2022, three products entered the top ten: natural gas (5th place), coking coal (8th place) and diesel trucks with a total weight of up to 5 tonnes (10th place). Compared to 2021, beer, cigarettes, cardboard cartons and boxes dropped out of the ranking of products with the highest value of sold production.

Chart 9 Top 10 industrial products by value of sold production

Specification	2022		2021		2018
Diesel oils	1	↔	1	↔	1
Lithium-ion batteries	2	↑	3	↔	-
Other parts and accessories for motor vehicles	3	↓	2	↔	2
Motor gasoline	4	↑	5	↓	3
High-methane natural gas, other than direct production	5	↑	-	-	-
TV receivers	6	↓	4	↑	8
Energy coal	7	↑	9	↓	5
Coking coal	8	↑	-	-	-
Marine and waterway structures and other structures and parts thereof, of iron or steel	9	↓	7	↑	10
Diesel trucks up to 5 tonnes gross vehicle weight	10	↑	-	-	9

Change from the previous year



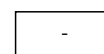
unchanged



increase



decrease



Outside the top 10

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

PKWiU Division	Products	2022
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	2 598 022.2
Food products	Prepared feeds for farm animals	.
Beverages	Beer	12 361 713.0
Tobacco products	Cigarettes	15 915 212.4
Textiles	Non-wovens and articles made from non-wovens, except apparel	1 707 401.8
Wearing apparel	Men's work and protective clothing sets, jackets and knitwear	753 984.6
Leather and related products	Articles of leather or composition leather for technical purposes	.
Wood and products of wood, cork, straw	Windows and doors, frames and thresholds, of wood	8 015 575.9
Paper and paper products	Cartons, boxes and cases of paper and corrugated paperboard	16 228 986.8
Printing services and reproduction services of recorded media	Printed books, brochures, leaflets and similar printed matter, in single sheets	2 820 363.7
Coke, briquette and refined petroleum products	Diesel oils	115 779 534.8
Chemicals and chemical products	Biodiesel and mixtures thereof	9 186 371.6
Pharmaceutical products and preparations	Medicaments, containing alkaloids or derivatives thereof, but not hormones or antibiotics	11 991 892.0
Rubber and plastic products	Doors, windows, frames and thresholds for doors, shutters, blinds and similar articles, of plastics	15 311 542.9
Other non-metallic mineral products	Portland cement, aluminous cement, slag cement and the like	7 415 131.2
Basic metals	Copper wire	.
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.	17 213 002.7
Computers, electronic and optical products	TV receivers	21 795 634.9
Electrical equipment	Washing machines and dryers	10 374 939.1
Machinery and equipment	Parts for spark-ignition engines, n.e.c	2 726 379.6
Motor vehicles, trailers and semi-trailers	Parts and accessories n.e.c., for motor vehicles	38 038 826.4
Other transport equipment	Self-propelled railway or tramway coaches, vans and trucks	5 234 954.8
Furniture	Upholstered seats with wooden frames	15 970 652.3
Other manufactured goods	Candles, tapers and the like	4 643 107.0

1.7. Sold production of products with embedded systems

An embedded system is 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.

An element of the Internet of Things (IoT) is a product with an embedded system that can be connected 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

In the period 2018-2022, the number of entities declaring the production of products with embedded systems systematically increased. In 2022, 503 economic entities reported the production of products with embedded systems, while in 2018 there were only 295 of them.

Table 11. Number of entities producing products with embedded systems

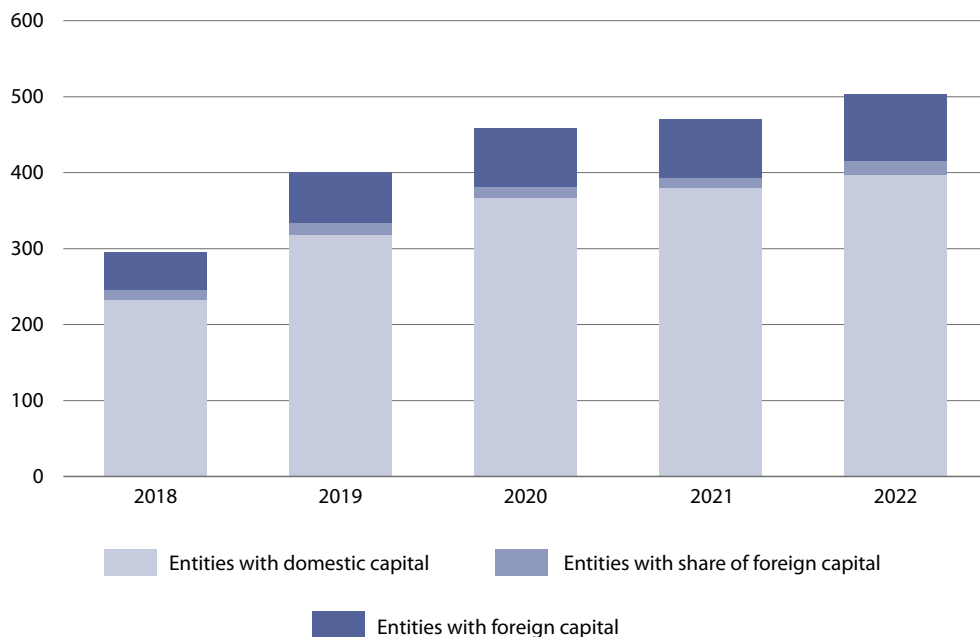
Year	Capital of entity	Entities reporting products with embedded systems	
		with IoT	
2022	Total	503	209
	with domestic capital	397	162
	with share of foreign capital	18	11
	with foreign capital	88	36
2021	Total	470	205
	with domestic capital	380	159
	with share of foreign capital	13	8
	with foreign capital	77	38

Table 11. Number of entities producing products with embedded systems (cont.)

Year	Capital of entity	Entities reporting products with embedded systems	
		with IoT	
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
2018	Total	295	125
	with domestic capital	233	101
	with share of foreign capital	12	3
	with foreign capital	50	21

The vast majority of entities reporting the production of products with embedded systems were entities with domestic capital, and their share in the analysed period ranged from 79.0% to 80.8%. In 2022, compared to 2021 the share of entities with domestic capital decreased by 1.9 p.p. while entities with foreign capital (increase by 1.1 p.p) and entities with share of foreign capital – by 0.8 p.p.).

In 2022, entities producing products with elements of IoT accounted for 41.6% of all entities declaring the production of products with embedded systems. Their share decreased compared to the previous year by 2.1 p.p., and in 2018 by 0.8 p.p.

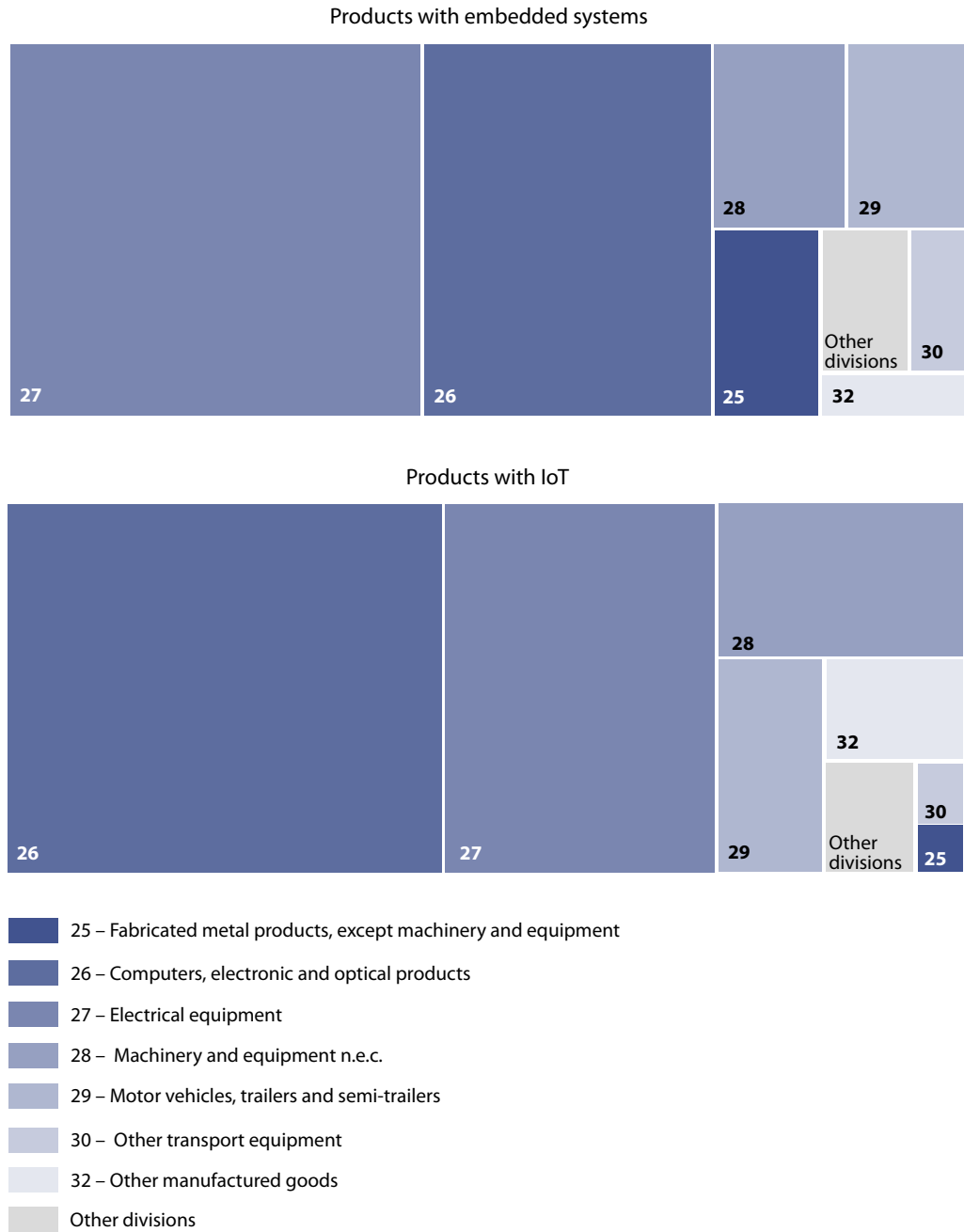
Chart 10. Number of entities declaring sold production of products with embedded systems by origin of capital

Products with embedded systems were produced primarily 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 basic type of activity was classified in division 27 Manufacture of electrical equipment – 42.2%, and in the case of entities producing IoT products – in division 26 Manufacture of computer, electronic and optical products (45.6 %).

Chart 11. Structure of entities producing products with embedded systems and IoT by predominant activity of entities in 2022



1.7.2. Structure of sold production of products with embedded systems

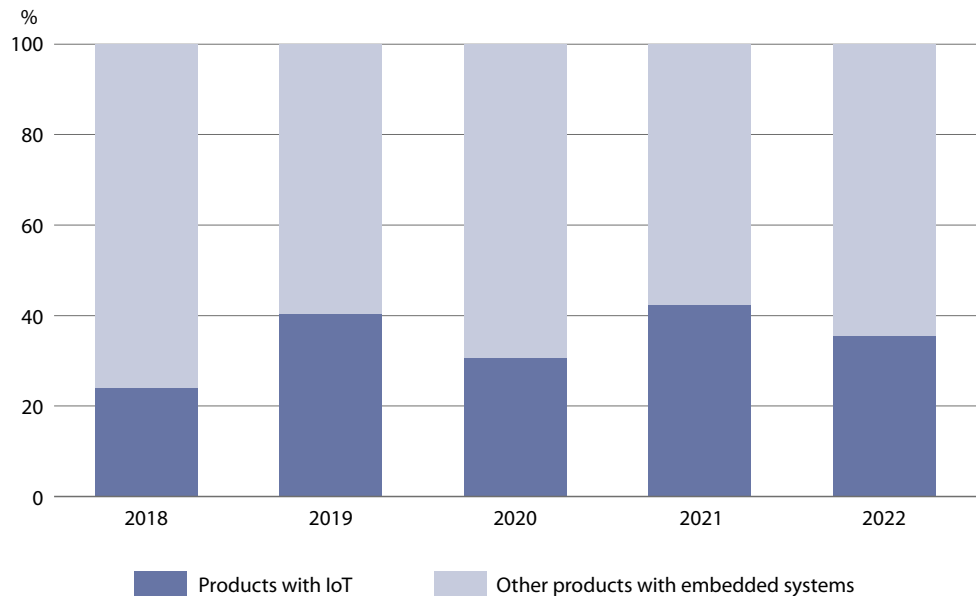
In the period 2018–2022, the sold production of products with embedded systems systematically increased. In 2022, it amounted to PLN 32,205 million and was more than three times higher than in 2018. The sold production of products with IoT amounted to PLN 11,424.8 million in 2022 and was 12.8% lower compared to 2021, when its highest value was recorded in the analysed period.

Although the population of entities producing products with embedded systems was dominated by entities with domestic capital, they reported sold production of products of a much lower value than entities with only foreign capital. In 2022, the sold production of products with embedded systems reported by entities with foreign capital amounted to PLN 22,482.1 million, which represented 69.8% of the total sold production. In the case of products with IoT, the production sold in 2022 amounted to PLN 11,424.8 million, which represented 80.8%. The sold production reported by entities with a predominant share of foreign capital in the presented period amounted to 2.7% in 2018, and in 2022 only 1.5%. In the case of entities with domestic capital, the share of sold production of products with embedded systems in domestic sold production increased from 23.3% to 28.7% in the presented period.

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

Specification	2018	2019	2020	2021	2022
	in thousand PLN				
Products with embedded systems	9 723 023.1	1 1825 654.6	24 051 254.3	30 947 213.8	32 204 953.9
entities with domestic capital	2 261 093.2	4 740 039.5	6 482 861.0	6 722 744.4	9 245 148.0
entities with share of foreign capital	258 240.1	196 694.6	252 456.4	233 365.3	477 657.9
entities with foreign capital	7 203 689.8	6 888 920.5	17 315 936.9	23 991 104.1	22 482 148.0
Products with IoT	2 339 020.5	4 779 650.8	7 392 806.7	13 103 091.1	11 424 764.1
entities with domestic capital	470 564.9	1 015 169.8	1 428 349.7	1 808 905.8	2 084 301.7
entities with share of foreign capital	474.6	23 892.0	112 606.8	41 746.8	107 394.9
entities with foreign capital	1 867 981.0	3 740 589.0	5 851 850.2	11 252 438.5	9 233 067.5

The share of products with IoT in the value of sold production of products with embedded systems increased from 24.1% in 2018 to 35.5% in 2022, and its highest value was recorded in 2021 – 42.3%

Chart 12. Sold production of products with embedded systems

The sold production of products with embedded systems took place mainly as part of own-account production. In 2022, the value of production sold on own account amounted to PLN 31,689.6 million, while production sold under sub-contracted operations amounted to PLN 515.3 million, which represented only 1.6% of the total production sold of products with embedded systems. In the case of products with only an IoT element, the share of production under sub-contracted operations in 2022 was 3.3%. In 2022, the highest value of sold production of products with embedded systems, including products with IoT element under sub-contracting operations, was reported by entities with the predominant kind of activity classified in division 27 Manufacture of electrical equipment. In the case of own-account production, the largest share in sold production also had enterprises with the predominant kind of activity classified in division 27 Manufacture of electrical equipment – 41.9% and division 26 Manufacture of computer, electronic and optical products – 26.1%. In the case of sub-contracted production, the highest share of sold production was recorded for entities with the predominant kind of activity classified in division 26 Manufacture of computer, electronic and optical products – 57.9%.

Table 13. Sold production of products with embedded system and IoT in 2022 by primary kind of activity of entity (PKD)

PKD	Products containing	Sold production in thousand PLN		
		total	on own account	under sub-contracted operations
TOTAL	embedded systems	32 204 953.9	31 689 634.8	515 319.1
	Internet of Things	11 424 764.1	11 059 589.6	365 174.5
division 25	embedded systems	1 738 149.2	1 675 353.4	62 795.8
	Internet of Things	79 004.3	77 418.1	1 586.2
division 26	embedded systems	8 326 833.1	8 265 471.2	61 361.9
	Internet of Things	5 214 322.6	5 184 369.9	29 952.7
division 27	embedded systems	13 579 454.0	13 280 963.0	298 491.0
	Internet of Things	3 257 316.6	2 967 436.6	289 880.0
division 28	embedded systems	3 273 226.7	3 237 583.2	35 643.5
	Internet of Things	1 248 393.1	1 230 339.9	18 053.2
division 29	embedded systems	2 391 970.3	2 391 970.3	–
	Internet of Things	741 699.5	741 699.5	–
division 30	embedded systems	1 003 949.2	1 003 949.2	–
	Internet of Things	99 202.9	99 202.9	–
division 32	embedded systems	725 785.7	715 293.7	10 492.0
	Internet of Things	455 269.2	451 905.2	3 364.0

The highest value of sold production in 2022 for products with embedded systems was recorded for entities with the predominant kind of activity classified in division 27 Manufacture of electrical equipment – PLN 13,579.5 million. Among these entities, the majority were enterprises with foreign capital – 85.9%. The highest value of sold production of products with IoT was recorded for entities with the predominant kind of activity classified in division 26 Manufacture of computer, electronic and optical products – PLN 5,214.3 million. As in the case of products with embedded systems, the largest share in the value of sold production of products with IoT was held by entities only with foreign capital.

Entities with only foreign capital conducting activities classified in most PKD divisions had a dominant or predominant share in the value of sold production of products with embedded systems, including products with elements of the IoT. Among entities with the kind of activity classified in division 25 Manufacture of fabricated metal products, except machinery and equipment and in division 28 Manufacture of machinery and equipment not elsewhere classified, in the production of products with embedded systems, including products with IoT, the majority were enterprises with domestic capital. Entities with a predominant share of foreign capital, regardless of the kind of activity, had little participation 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 2022 by primary kind of activity of entity and origin of capital

PKD	Capital of entity	Sold production of products	
		with embedded systems	products with IoT
		thousand PLN	
TOTAL	total	32 204 953.9	11 424 764.1
	domestic	9 245 148.0	2 084 301.7
	with share of foreign capital	477 657.9	107 394.9
	foreign capital	22 482 148.0	9 233 067.5
division 25	total	1 738 149.2	79 004.3
	domestic	1 334 891.3	72 072.3
	with share of foreign capital	123 255.0	6 932.0
	foreign capital	280 002.9	–
division 26	total	8 326 833.1	5 214 322.6
	domestic	1 871 882.4	746 297.5
	with share of foreign capital	77 388.5	33 122.0
	foreign capital	6 377 562.2	4 434 903.1
division 27	total	13 579 454.0	3 257 316.6
	domestic	1 770 269.3	219 035.9
	with share of foreign capital	147 466.4	16 782.6
	foreign capital	11 661 718.3	3 021 498.1
division 28	total	3 273 226.7	1 248 393.1
	domestic	1 735 118.4	791 951.1
	with share of foreign capital	17 395.0	14 212.0
	foreign capital	1 520 713.3	442 230.0
division 29	total	2 391 970.3	741 699.5
	domestic	894 023.3	7 208.5
	with share of foreign capital	–	–
	foreign capital	1 497 947.0	734 491.0
division 30	total	1 003 949.2	99 202.9
	domestic	852 053.8	63 715.9
	with share of foreign capital	–	–
	foreign capital	151 895.4	35 487.0
division 32	total	725 785.7	455 269.2
	domestic	85 940.7	30 355.2
	with share of foreign capital	–	–
	foreign capital	639 845.0	424 914.0

Chapter 2.

Manufactured production of selected industrial products by industry branch

2.1. Energy raw materials

Energy products include primarily hard coal and lignite, coke, pellets, gasoline, fuel and diesel oils, i.e. products intended for heating or driving purposes. 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 admix-tures to heating fuels.

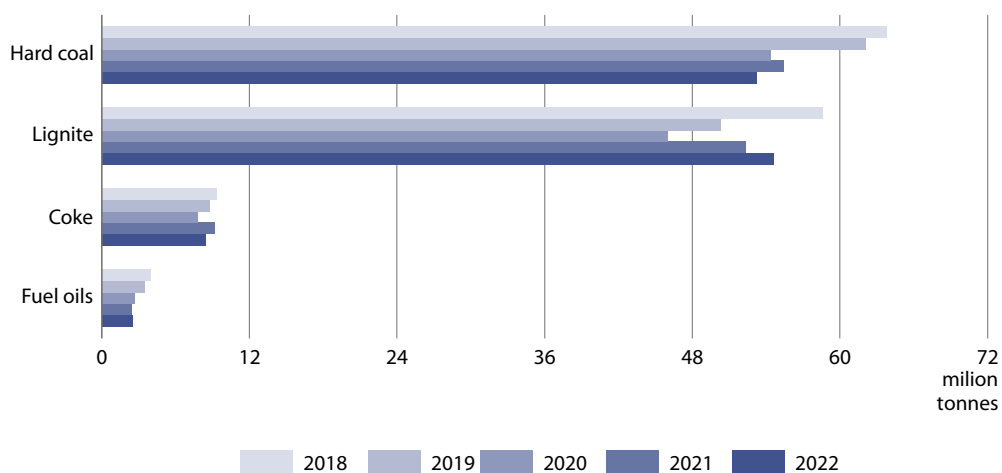
In Poland, the most popular fuel materials are still hard coal and lignite. In the analysed period, an increase in hard coal mining was observed only in 2021 (by 1.1% in comparison to 2020). In 2022, hard coal production reached the level of 53,239 thousand tonnes and was lower by 3.8% in comparison to the previous year and by 16.6% in comparison to 2018.

By 2020, there was a decline in mining of lignite from 58,571 thousand tonnes to 45,983 thousand tonnes. From 2021, production increased and in 2022 it amounted to 54,621 thousand tonnes, however, it did not reach the level from the beginning of the analysed period (it was lower by 6.7%).

Among other minerals that are an energy raw material, oils from crude oil production in 2022 amounted to 854 thousand tonnes, which means a decrease in production by 3.8% compared to 2021 and by 15.5% compared to 2018, when production amounted to 1,010 thousand tonnes.

In the analysed period there was also systematic decline in natural gas production, with the exception of 2019, when production slightly increased by 0.5%. In 2022 extracted 5,172 hm³ of natural gas, which means a decrease by 1.9% compared to 2021 and by 3.3% compared to 2018.

Chart 13. Manufactured production of fuel material



Another important energy product is provided by the coke industry. In Poland, there are 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. During the analysed period, coke production systematically decreased, except for 2021, when production increased by 19.3% compared to the previous year. In 2022, production of coke amounted to 8,485,978 tonnes and in comparison to 2018 decreased by 9.2%.

The production of fuel oils in 2022 was 2,500,306 tonnes and in comparison to 2018 was lower by 36.7%.

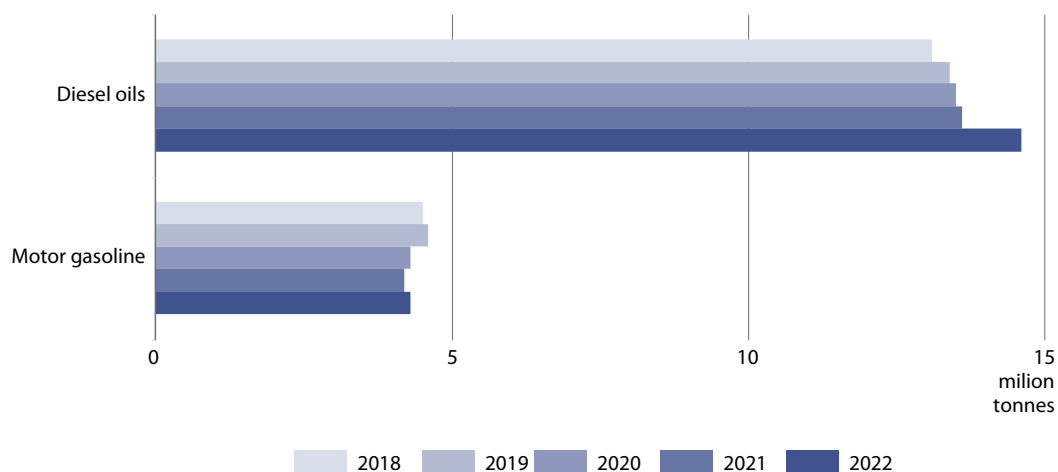
In the analysed period production of wood pellets and briquettes increased until 2021, after which in 2022 there was a decrease by 9.9% in comparison to the previous year. Compared to 2018, the production of this product increased by 22.1%.

Table 15. Manufactured production of selected energy raw materials

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Oils from crude oil	tonnes	1 010 332	972 564	937 462	888 082	854 050	84.5	96.2
Natural gas	hm ³	5 348	5 374	5 302	5 274	5 172	96.7	98.1
	PJ	159	159	157	155	152	95.6	98.1
Liquefied propane and butane	tonnes	601 423	630 497	633 792	591 727	626 582	104.2	105.9
Pellets and briquettes of pressed and agglomerated wood and of wood waste and scrap, including straw briquettes	1000 t	1 203	1 471	1 573	1 628	1 468*	122.1	90.1

* since 2022 survey covers also entities employing less than 9 people.

In 2022 in the group of fuels for internal combustion engines, the highest production is recorded for diesel oils – 14,587,413 tonnes. In the analysed period the volume of diesel oil production systematically increased and although production slowed down slightly in 2020 and 2021 due to the pandemic situation (there was observed a slight increase respectively by 0.6% and 1.1% in comparison to the previous year), compared to 2018, production for 2022 was higher by 11.5%. The second product in terms of production volume used as fuels for internal combustion engines was motor gasoline, including aviation gasoline (production in 2022 amounted to 4,335,371 tonnes). The volume of motor gasoline production changed in subsequent years: in 2019 there was a slight increase by 2.8% compared to the previous year, in 2020–2021 there was a decrease by 5.7% and 3.9%, respectively compared to the previous year, which was influenced by the pandemic situation and the temporary reduction in demand for fuel during the so-called "hard lockdown". In 2022, production increased again by 3.9% compared to the previous year, however it did not reach the level of 2018 (a decrease by 3.2%).

Chart 14. Manufactured production of fuels for internal combustion engines

2.2. Products of food and tobacco industry

Products of the food and tobacco industry include among others, but are not limited to, meat and meat products, fish and shellfish, processed fruit and vegetables, oils and fats of both animal and vegetable origin, dairy products, grain mill products, animal feeds and fodder, alcoholic and non-alcoholic beverages and tobacco products. In the annual survey for 2022, 537 products were statistically observed and production produced was reported for 481 products.

Meat and meat products play a significant role in the manufacture of food products. Total meat production fluctuated over the analysed period. Only in the case of beef and veal meat there was an increase in production in each year of the analysed period. In 2022, total meat production stood at 6 091 thousand tonnes and increased by 6.0% compared to the previous year. The largest increase in the manufactured production of meat in 2022 compared to 2018 was recorded for beef and veal meat – up 20.4%. Poultry meat came second in terms of production growth, up 9.9%. Pork meat production increased by only 4.7% compared to 2018 and amounted to 1,942 thousand tonnes.

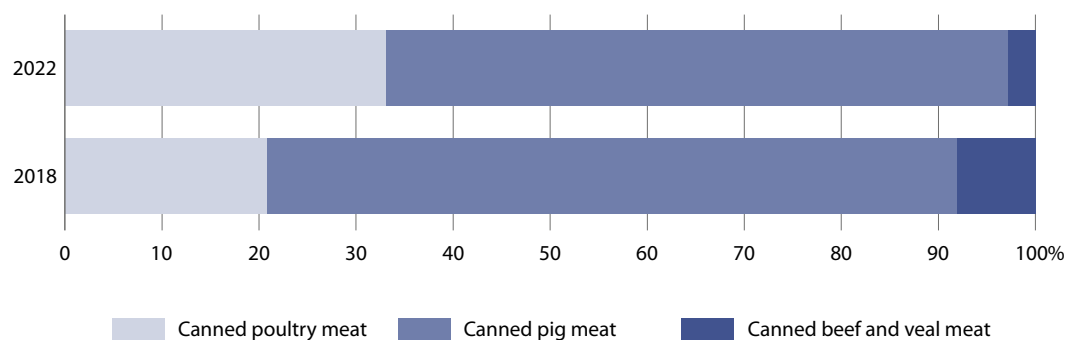
Meat from domestic rabbits and from sheep and lambs accounts for a small share of total meat production. Production of meat from domestic rabbits in 2022 stood at 1.8 thousand tonnes and decreased by 6.7% compared to 2018. For sheep and lamb meat, production in 2022 was 0.4 thousand tonnes, down 50.7% on 2018. For both types of meat, decreases of 6.3% and 28.1% respectively were also recorded in 2022 compared to 2021.

Table 16. Manufactured production of meat

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Meat (pork, beef, veal and poultry meat)	1000 t	5 569	5 540	5 842	5 744	6 091	109.4	106.0
of which:								
poultry meat	1000 t	3 056	3 079	3 286	3 158	3 358	109.9	106.3
pork meat	1000 t	1 855	1 799	1 880	1 861	1 942	104.7	104.3
beef and veal meat	1000 t	658	661	676	726	792	120.4	109.2

Canned meat play a major role in the production of meat products. Canned pig meat had the largest share in the total production of canned meat in Poland in 2022, with a share of 64.1% (71,131 tonnes). In 2022, compared to 2018, the share of canned pig meat in the total production of canned meat in the country decreased from 71.1% to 64.1%. Canned poultry meat came second, with a share of 33.1% in 2022, up 12.3 p.p. compared to 2018. For canned beef meat, the share decreased from 8.1% to 2.8%.

Chart 15. Structure of manufactured production of canned meat



The production of animal and vegetable fats, milk and dairy products plays an important role in the food industry. Among fat spreads, there can be distinguished fats produced on the basis of cream – butter and fats on the basis of vegetable oils – margarine.

In the first three years of the period analysed, butter production increased steadily until 2021, when there was a 5.3% drop in production. In 2022, compared to 2021, butter production increased by 4.3% to 251,529 tonnes. It also recorded a 13.1% increase compared to 2018. Butter of a fat content no more than 85% accounted for the predominant share of butter production (93.8%). Production of this type of butter in 2022 was 236,045 tonnes, up by 17.5% compared to 2018.

Margarine production in 2022 was 339,160 tonnes, up 5.6% compared to 2018 and 10.0% on the previous year.

Table 17. Manufactured production of animal and vegetable fats spread

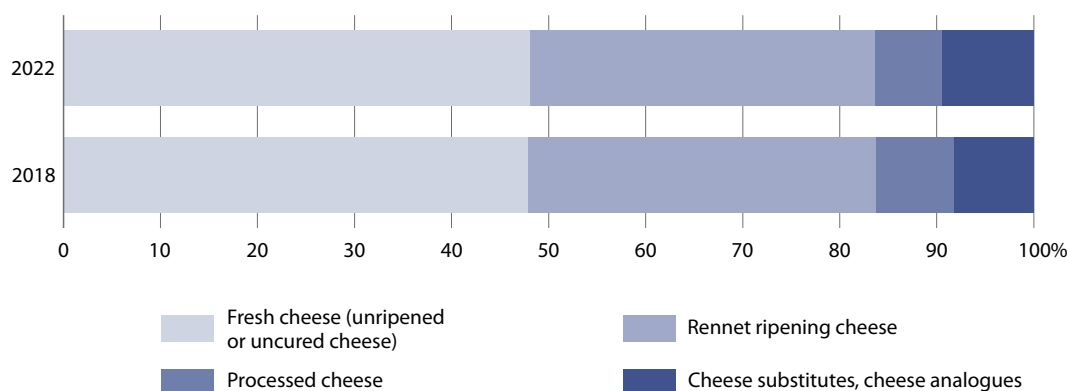
Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Butter	tonnes	222 385	237 213	254 625	241 218	251 529	113.1	104.3
butter of a fat content no more than 85%	tonnes	200 965	218 464	238 930	225 105	236 045	117,5	104,9
Margarine	tonnes	321 146	319 579	328 534	308 439	339 160	105.6	110.0

Among dairy products, the highest production was recorded for yoghurt in the analysed period 2018–2022. In second place there was kefir and in the last place there was buttermilk in liquid form. Yoghurt production increased by 2.1% in the analysed period to reach 381 thousand tonnes in 2022. Kefir production increased steadily from 2018 and was more than a third less than yoghurt production, with a 26.2% increase to 256 thousand tonnes in 2022 compared to 2018. The manufactured production of buttermilk in liquid form has remained at a similar level since 2020 – around 103 thousand tonnes.

Table 18. Manufactured production of milk and milk drinks

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Milk	1000 t	3 454	3 530	3 714	3 673	3 827	110.8	104.2
Yoghurt	1000 t	372	373	375	373	381	102.4	102.1
Kefir	1000 t	203	211	215	233	256	126.2	109.9
Buttermilk in liquid form	1000 t	94.4	95.5	103	103	103	108.6	99.3

In the cheese market, we can distinguish between two types of cheese based on the type of fat used in their production. In most cases, milk fat is used in the production of cheese, however, a small percentage of cheeses are produced with vegetable fat – these products are cheese substitutes or cheese analogues.

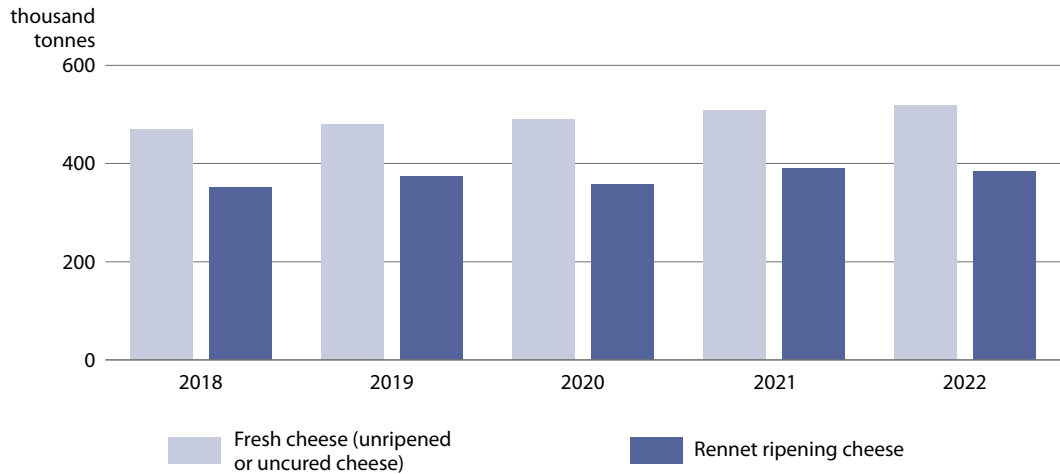
Chart 16. Structure of manufactured production of cheese

Fresh cheese accounted for the largest share of the total cheese produced in Poland in 2022 – 48.1% (518,933 tonnes). In second place there were rennet cheeses, whose share was 35.6% and it was almost at the same level as in 2018. Third and fourth there were cheese substitutes and processed cheese, respectively, with shares of 9.4% and 6.9%. In 2022, compared to 2018, the share of fresh cheese in domestic cheese production increased from 47.9% to 48.1%, and cheese substitutes from 8.2% to 9.4%. However, the share of processed cheese in total cheese production decreased by 1.2 p.p.

The increase in the production of cheese and curd was observed during the period under review, with production in 2022 shaping up to be 6.9% higher than in 2018, at 992,477 tonnes.

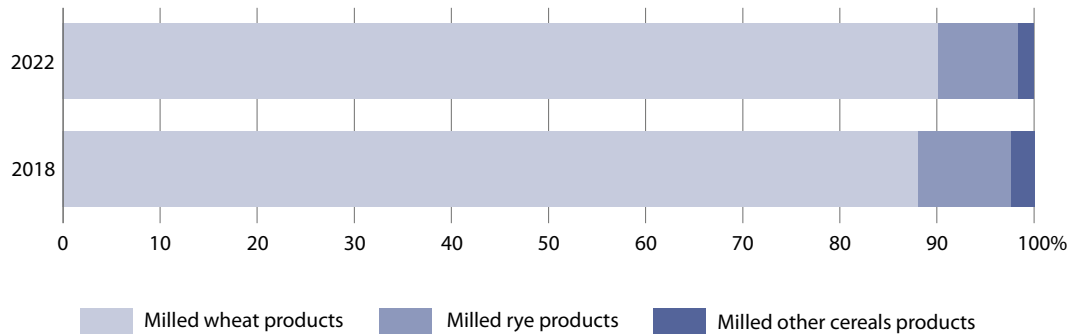
A similar increase was observed for fresh cheese and rennet cheeses, whose production increased by 10.4% and 9.2% in 2022 compared to 2018 and amounted to 518,933 tonnes and 383,967 tonnes, respectively. In contrast, rennet cheese production in 2022 compared to 2021 decreased by 1.8%. For fresh cheese, there was a slight increase of 1.9%.

Chart 17. Manufactured production of cheese and curd



Grain milling plays a major role in the food industry. Wheat milled products accounted for the largest share of grain milling in Poland in 2022, with a share of 89.9% (2,653 thousand tonnes). In 2022, compared to 2018, this share increased by 2.0 p.p. Rye milled products came second, with a decrease in the share of rye milled products from 9.5% to 8.3% in 2022 compared to 2018.

Chart 18. Structure of grain mill products



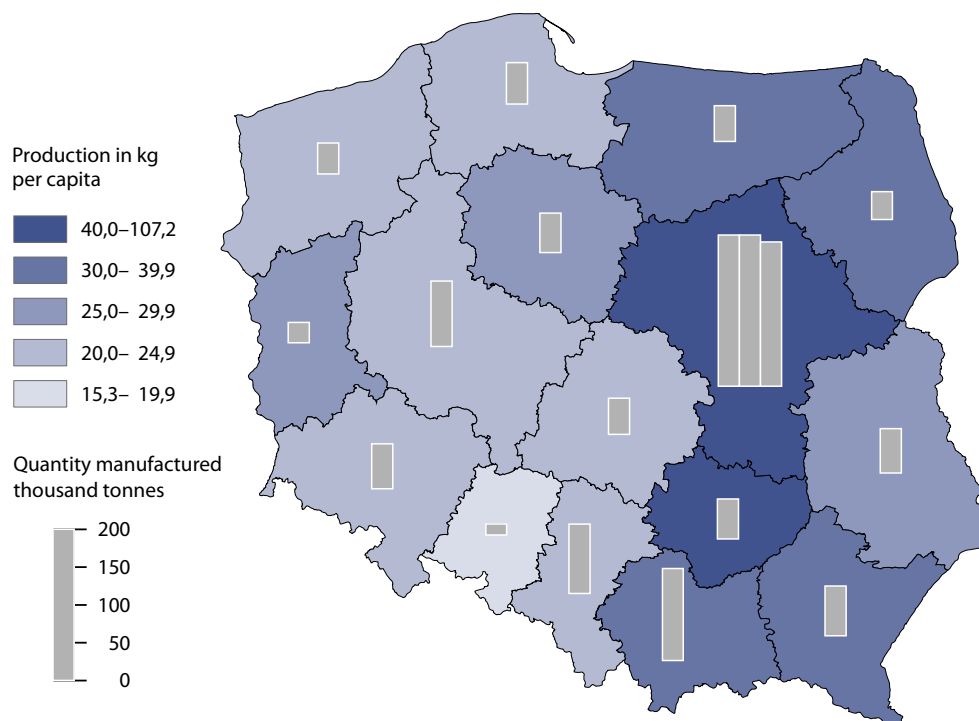
Among grain milling products, flours and groats are the most important. Barley groats and meal accounted for the largest share of groats and meals, with production of 24,610 tonnes in 2022, up 23.8% on 2018. Wheat groats and meal came in second place. Third place was taken by buckwheat groats and meal, and in fourth place was millet porridge. The production of barley groats and meal grew during the analysed period, but in 2019 and 2021, compared to previous years, there was a decrease in production of 8.7% and 21.3% respectively (in 2022, production was 21,222 and 19,882 tonnes respectively). For wheat groats and meal, the largest increase in production to 23,665 tonnes was recorded in 2019 compared to 2018. (by 59.0%). Between 2020 and 2021, production was lower and remained at a similar level (17,993 tonnes in 2021). In 2022, compared to 2018, production increased by 24.4%. The production of buckwheat groats and meal fluctuated between 2018 and 2022, with a 44.4% decrease in production in 2021 compared to 2020. The production volume of millet porridge decreased between 2018 and 2022, with 3,555 tonnes in 2022, down 16.6% compared to 2021.

Table 19. Manufactured production of groats and meal from cereals

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Wheat groats and meal	tonnes	14 880	23 665	17 676	17 993	22 376	150.4	124.4
Barley groats and meal	tonnes	23 233	21 222	25 267	19 882	24 610	105.9	123.8
Buckwheat groats and meal	tonnes	9 119	10 412	9 557	5 314	5 366	58.8	101.0
Millet porridge	tonnes	6 527	4 530	5 244	4 263	3 555	54.5	83.4

Fresh bread production plays an important role in the food industry. From 2018 onwards, the production of fresh bread decreased marginally, with only an increase of 8.1% in 2022 compared to 2021.

The production of fresh bread per capita in most voivodeships was below 20 kilograms. The smallest production was in the Opolskie Voivodeship – 15.3 kilograms per capita, respectively. In nine Voivodeships, production varied between 20 and 30 kilograms per capita, with the Lubelskie Voivodeship standing out with a production of 29 kilograms. In five voivodeships, production was between 31 and 50 kilograms per capita. Here, the Świętokrzyskie Voivodeship was in the lead, with the production of 44.9 kilograms. The highest production was in the Mazowieckie Voivodeship, with 107.2 kilograms per capita.

Map 1. Manufactured production of fresh bread per capita by voivodeships in 2022

The largest share of fresh bread production in the analysed period was recorded for wheat-rye bread, whose production in 2022 amounted to 696 thousand tonnes and increased by 3.2% compared to 2021. Wheat bread came in second place, rye bread took third place. The production of wheat-rye bread decreased by 17.5% in 2022 compared to 2018. For wheat bread, the largest increase compared to 2018 was recorded in 2022 (to 618 thousand tonnes, up 14.0%). Between 2018 and 2021, production was lower and remained at a similar level (in 2021 – 531 thousand tonnes), however in 2022, compared to 2021, it increased by 16.3%. The production volume of rye bread decreased slightly between 2018 and 2022, reaching 87.8 thousand tonnes in 2022, lower by 2.4% on 2021.

Table 20. Manufactured production of fresh bread

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Fresh bread	1000 t	1 514	1 466	1 381	1 340	1 448	95.4	108.1
rye bread	1000 t	95.7	93.9	91.9	89.9	87.8	91.7	97.6
wheat bread	1000 t	541	531	527	531	618	114.0	116.3
wheat-rye bread	1000 t	841	797	724	675	696	82.5	103.2

Sugar is the most popular sweetener and is also used extensively in the food industry. There was a slight decrease in sugar production between 2018 and 2022, with sugar production in 2020 at 1,992 thousand tonnes (9.4% lower than in 2019). In 2021 and 2022, production remained at a similar level, reaching 2,146 thousand tonnes in 2022.

Table 21. Manufactured production of sugar and sugar confectionery

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Sugar	1000 t	2 211	2 200	1 992	2 151	2 146	97.0	99.7
Chocolate including white chocolate	tonnes	272 614	278 021	289 635	326 836	342 542	125.7	104.8
Chocolates	tonnes	57 976	53 338	50 122	50 936	46 387	80.0	91.1
Chocolate coated dragees	tonnes	21 671	24 220	22 174	21 771	23 407	108.0	107.5

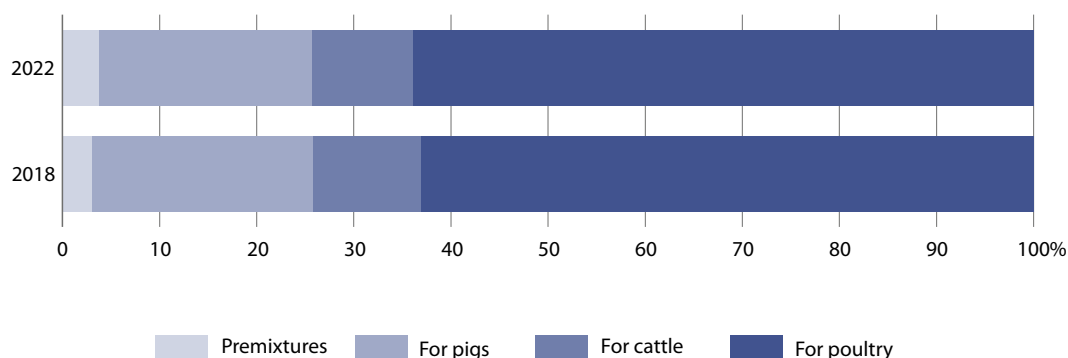
Chocolate, including white chocolate, includes chocolate in various forms, bars, blocks, with filling or other additives: nuts, grains, fruit. Between 2018 and 2022, the manufactured production of chocolate has increased steadily. In 2022, it amounted to 342,542 tonnes and increased by 25.7% compared to 2018. The increase in production compared to 2018 was also recorded for chocolate coated dragees (by 8.0%). The production of chocolates trended downwards over the analysed period and amounted to 57,976 tonnes and 46,387 tonnes in 2018 and 2022 respectively.

Fruit and vegetable processing is an important part of food industry products. Frozen vegetables and fruit are by far the dominant item in terms of production volume. The production of frozen vegetables slightly decreased by 0.9% in 2022 compared to 2021 to 566,841 tonnes. Decrease also occurred compared to 2018 (by 12.2%). In 2021, it amounted to 378,997 tonnes and was lower 14.8% compared to 2018, while in 2022, an increase by 3.9% was recorded compared to the previous year (up to 393,639 tonnes). Between 2018 and 2021, production of canned vegetables and dried fruit had an increasing trend. In 2022, there was a slight decrease in the production of canned vegetables compared to the previous year – by 0.6%. For dried fruit, production decreased by 17.8% and amounted to 10,286 tonnes. Compared to 2018, production of canned vegetables in 2022 increased by 24.1% and dried fruit by 27.2%.

Table 22. Manufactured production of processed fruit and vegetables

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Frozen vegetables (excluding potatoes)	tonnes	645 325	538 826	552 691	571 736	566 841	87.8	99.1
Canned vegetables	tonnes	362 822	369 660	399 312	452 840	450 317	124.1	99.4
Frozen fruit and nuts	tonnes	445 050	403 700	390 264	378 997	393 639	88.4	103.9
Dried fruit (excluding grapes)	tonnes	8 086	10 932	12 258	12 509	10 286	127.2	82.2

The food industry also produces products for agriculture, i.e. feeds. This group of products is dominated by the production of feed for poultry, the share of which in the total production of prepared feed in Poland in the period 2018–2022 increased from 63.1% to 63.9%. Production in 2022 amounted to 7,248 thousand tonnes, up by 6.3% compared to 2018. The production of feed for pig came second with a 21.9% share. Its share decreased compared to 2018 by 0.9 p.p. In 2022, there was a decrease in the share of feed for cattle from 11.0% to 10.4% compared to 2018. Premixes came last, with a share of 3.1% (325 thousand tonnes) in 2018 and in 2022, it increased by 0.7 p.p.

Chart 19. Structure of manufactured production of prepared feeds for farm animals

In the division Distilled alcoholic beverages, the production of vodka, gin, rum and whisky plays a significant role among strong alcoholic beverages.

The largest increase in the production of vodka was recorded in 2021 compared to 2020 (by 9.8%), and its production amounted to 1,080 thousand hectolitres. In 2022, production of vodka decreased by 5.8% compared to 2021 and amounted to 1,018 thousand hectolitres. Gin production varied from 2018. Slight decreases were recorded in 2020 and 2022 (by 0.4% and by 4.5% respectively), while an increase in production was recorded in 2022 compared to 2018 (77.8% – to 12,028 hectolitres). The increase in production of rum was recorded between 2018 and 2020. In 2020, compared to 2019, it was 40.0% higher with a production of 9,355 hectolitres. From 2021 onwards, production declined steadily and amounted to 7,861 hectolitres in 2022, registering a decline of 9.2% compared to 2021. Production of whisky followed a downward trend between 2018 and 2022, with a slight increase in 2021 compared to 2020 (by 10.8% – to 613 hectolitres). In 2022, it stood at 398 hectolitres, lower by 54.6% compared to 2018.

Table 23. Manufactured production of distilled alcoholic beverages

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Whisky	hl 100%	877	587	553	613	398	45.4	64.9
Rum	hl 100%	6 067	6 684	9 355	8 660	7 861	129.6	90.8
Gin and Geneva	hl 100%	6 765	9 384	9 345	12 596	12 028	177.8	95.5
Vodka	1000 hl 100%	971	1 057	984	1 080	1 018	104.8	94.2

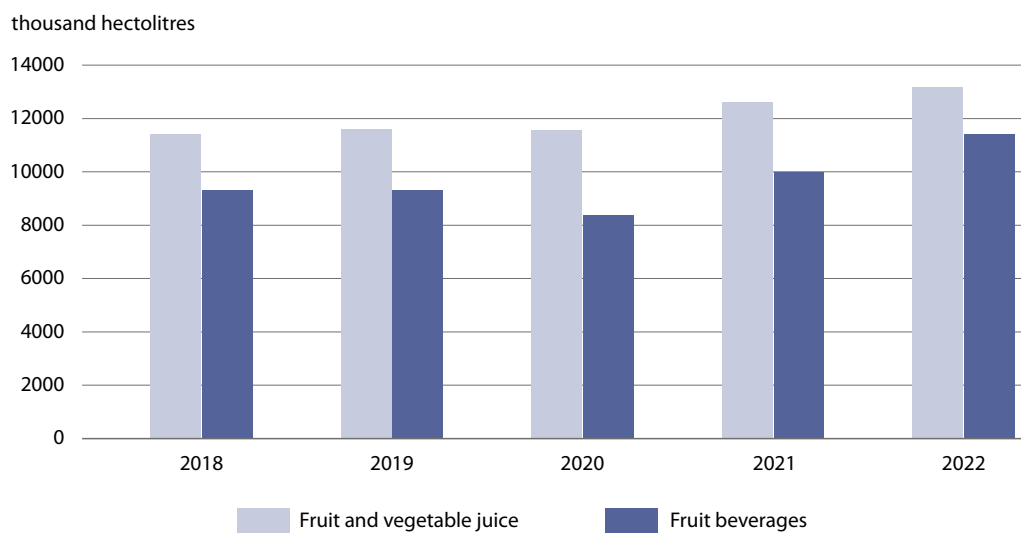
A decrease in beer production, excluding non-alcoholic beer, was observed during the period under review. In 2022, production stood at 37,964 thousand hectolitres and decreased by 8.5% compared to 2018. Production of non-alcoholic beer increased between 2018 and 2022 (by 120.4% in 2022 compared to 2018) and amounted to 2,471 thousand hectolitres.

Since 2018, the share of non-alcoholic beer in total beer production has gradually increased from 2.7% in 2018 to 6.5% in 2022. During the period under review, cider production decreased from 52,842 hectolitres to 49,425 hectolitres, while perry production increased by 14.5% to reach 4,118 hectolitres in 2022.

Table 24. Manufactured production of low-alcohol beverages

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Beer, excluding non-alcoholic beer	1000 hl	41 482	40 411	39 066	38 832	37 964	91.5	97.8
Non-alcoholic beer	1000 hl	1 121	1 728	1 915	2 293	2 471	220.4	107.8
Cider	hl	52 842	52 504	43 478	50 710	49 425	93.5	97.5
Perry	hl	3 597	5 330	4 379	2 478	4 118	114.5	166.2

Among non-alcoholic beverages, juices and beverages play a significant role. In 2022, 1,774 thousand hectolitres more fruit and vegetable juices were produced than fruit beverages. For fruit and vegetable juices, there was an increase in production in 2022 compared to 2018 – by 15.8%, and for fruit beverages – by 22.5%. During the analysed period, a slight decrease in the production of fruit and vegetable juices compared to the previous year was recorded only in 2020 (by 0.5%), while for fruit beverages a decrease in production compared to the previous year was observed in 2019 – by 0.3% and in 2020 – by 10.1%.

Chart 20. Manufactured production of juices and beverages

During the analysed period 2018–2022, production of cigarettes increased year-on-year, with the exception of 2021, when there was a 3.3% decline in production to the previous year. The highest level of production – 231,736 million units – was recorded in 2022, when production increased by 9.3% compared to 2018 and by 7.4% compared to 2021. The production of tobacco followed an upward trend between 2018 and 2022, with only a decrease of 8.9% recorded in 2021 compared to 2020. In 2022, compared to 2018, smoking tobacco production increased by 44.6% and stood at 52,234 tonnes. Compared to 2021, the increase was slightly lower at 32.0%.

Table 25. Manufactured production of cigarettes and tobacco

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Cigarettes	million units	211 977	213 314	223 219	215 776	231 736	109.3	107.4
Smoking tobacco	tonnes	36 134	37 801	43 457	39 583	52 234	144.6	132.0

2.3. Textiles, wearing apparel and leather 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, nonwovens and non-woven products, technical and industrial textile products, leather, knitted and woven clothing, workwear and protective underwear, clothing accessories, fur products, hosiery, leather and leather goods and footwear.

In the division Textiles, Clothing and Leather goods, 441 products and assortment groups were observed. In 2022 data on production for 402 groupings were reported.

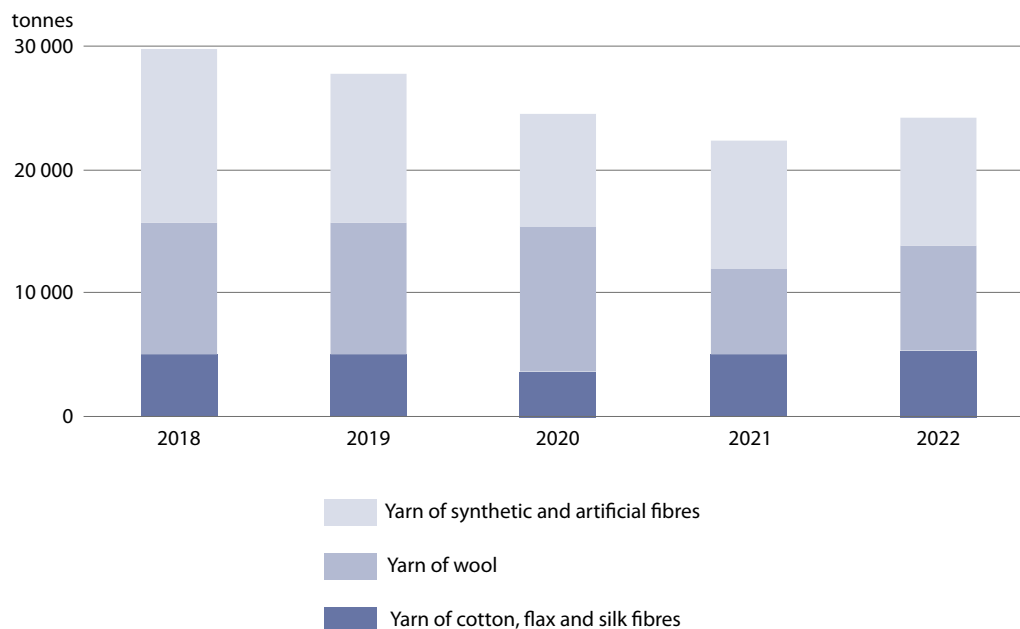
In the analysed period, a decrease in the amount of yarn produced was observed from 29,674 tonnes in 2018 to 24,218 tonnes in 2022, i.e. by 18.4%, although compared to 2021, yarn production increased by 8.8%.

A large increase in production was recorded for cotton yarn, the production of which increased by 163.7% compared to 2018. The production of linen yarn remained at a similar level as in 2018. In the analysed period, a decrease in the production of yarn made of chemical synthetic and artificial fibres was observed until 2020. Since 2021, an increase in the production of this type of yarn has been recorded, but it did

not reach the level of 2018 and was lower by 25.2%. Production of yarn of wool decreased in 2022, by 22.2% compared to 2018, but compared to 2021 an increase of 21.7% was recorded.

In Poland, mainly yarn from chemical fibres was produced (10,470 tonnes in 2022) and wool yarn (8,354 tonnes).

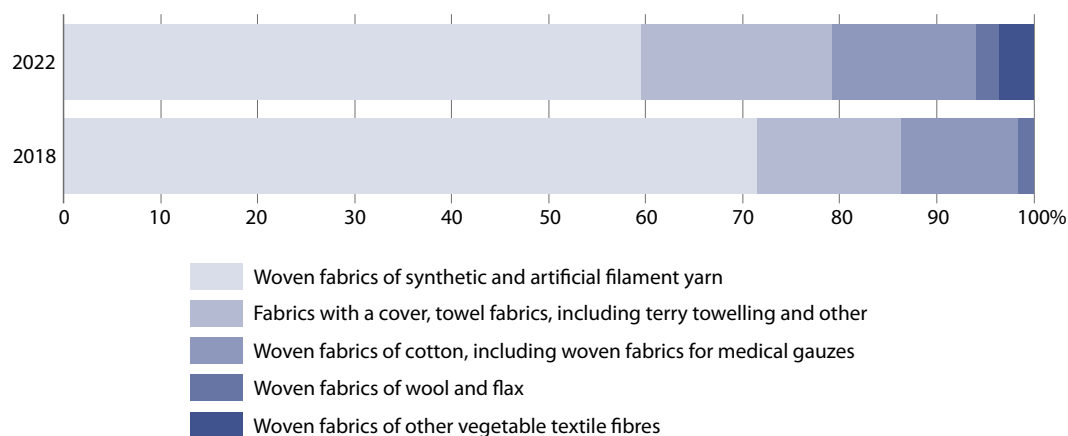
Chart 21. Manufactured production of textile yarn



In the group of fabrics, as in the case of yarns, a systematic decline in production has been observed for several years. In 2022, a total of 94.2 thousand m² of fabrics were produced – compared to 2018, the production of fabrics decreased by 39.2%. The largest amount – 59.6% of fabrics produced in Poland – were woven fabrics made of synthetic and artificial fibre yarns, of which 56,112 thousand m² were produced in 2022 (an increase of 16.2% compared to 2021). Production of cotton fabrics, including medical gauze fabrics, were much lower in 2022 compared to 2018 (down 19.7% and 25.4%, respectively), reaching final level of 18,472 thousand m² and 13,969 thousand m², respectively.

Table 26. Manufactured production of woven fabrics

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Woven fabrics of flax	1000 m ²	1 921	2 654	2 939	1 876	2 113	110.0	112.6
Woven fabrics wool or fine animal hair	1000 m ²	412	222	264	154	228	55.3	148.1
Other textile fibres	1000 m ²	–	3 086	3 412	2 832	3 292	.	116.2
Woven fabrics of cotton, excluding woven fabrics for medical gauzes	1000 m ²	18 731	19 086	16 611	18 669	13 969	74.6	74.8
Woven fabrics of synthetic and artificial filament yarn	1000 m ²	110 940	96 555	71 862	70 331	56 112	50.6	79.8
Fabrics with a cover, towel fabrics, including terry towelling and other	1000 m ²	22 998	21 561	24 177	18 818	18 472	80.3	98.2

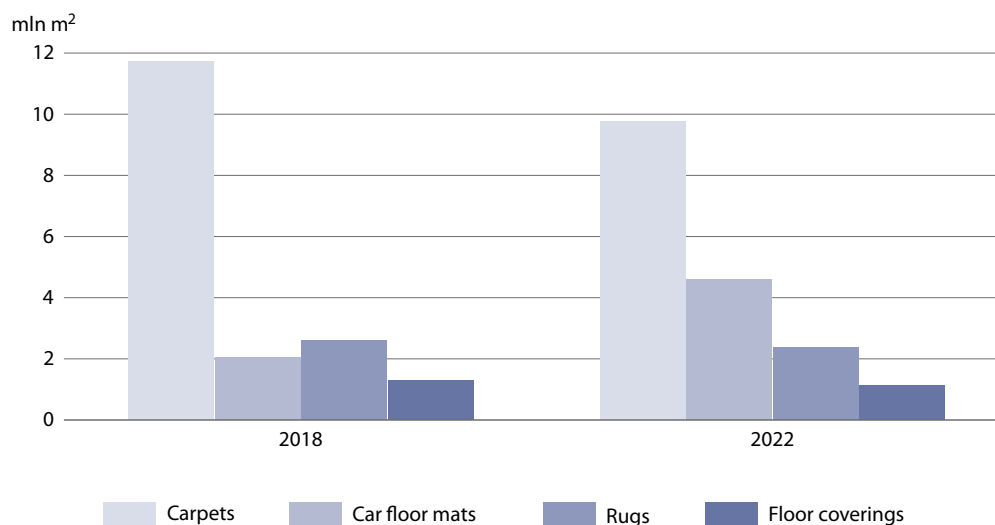
Chart 22. Structure of manufactured production of woven fabrics by type

In the analysed period, a systematic decline in the production of most textile products was observed. In 2022, compared to 2018, the production of, among others, textiles, toilets and kitchens decreased by 42.6%, blankets and travelling rugs – by 38.9%, sacks and bags – by 34.1%, table linen – by 31.8%, bed linen – by 31.7%. On the other hand, the production of nonwovens and non-woven products increased by 44.5% and bedding products – by 5.8%.

Table 27. Manufactured production of other textile products

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Blankets and travelling rugs	1000 units	897	981	662	655	548	61.1	83.7
Bed linen	1000 units	26 815	28 703	20 438	20 763	18 305	68.3	88.2
Table linen	1000 units	2 681	2 615	2 985	2 522	1 829	68.2	72.5
Toilets and kitchens textiles	1000 units	78 384	89 914	57 409	62 233	44 986	57.4	72.3
Curtains and interior blinds	1000 m ²	23 882	23 936	22 656	27 419	22 635	94.8	82.6
Sacks and bags used for packing goods	1000 t	8 111	8 137	7 914	6 613	5 348	65.9	80.9
Bedding products	1000 units	36 397	35 454	41 567	45 676	38 514	105.8	84.3
Twine, cordage and rope	tonnes	18 797	21 159	19 072	16 902	15 317	81.5	90.6
Nonwovens and non-woven products	tonnes	95 078	93 889	129 101	162 375	137 410	144.5	84.6

Among textile floor coverings, the production of carpets dominates. In 2022, the production of carpets produced amounted to 9.8 million m², and their share in the group of floor coverings decreased in the analysed period from 66.5% in 2018 to 54.6% in 2022. The demand for floor coverings on the market was supplemented by the production of pavements and carpets (2.4 million m² and 1.1 million m², respectively). The share of rugs in the production of textile floor coverings decreased from 14.7% in 2018 to 13.3% in 2022. In the analysed period, the share of carpets also decreased from 7.3% in 2018 to 6.4% in 2022. On the other hand, the production of car mats increased significantly – by 126.3%, and their share in floor coverings increased from 11.5% in 2018 to 25.8% in 2022.

Chart 23. Manufactured production of textile floor coverings

In the group of women's clothing made of woven and knitted fabrics, the production of blouses among others was significant, with the production of 2,705 thousand units in 2022, jackets and costumes being the second product in terms of production volume – 2,370 thousand units, and the third – women's or girls' trousers – 1,982 thousand units.

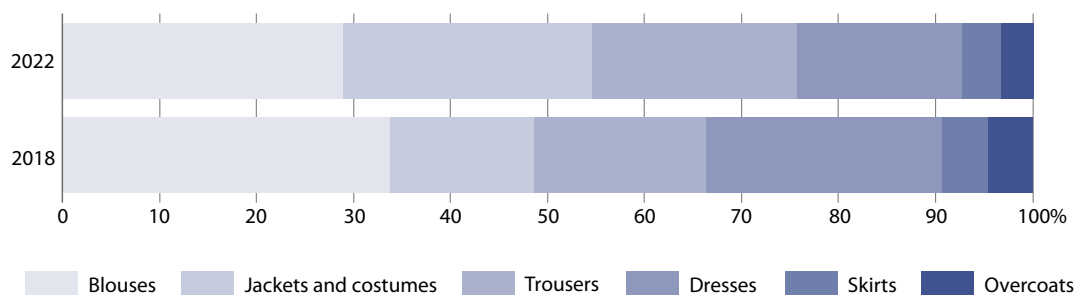
Table 28. Manufactured production of women's wearing apparel

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Outerwear	1000 units	805	523	326	360	287	35.7	79.6
Jackets and costumes	1000 units	2 813	2 170	2 283	2 140	2 370	84.3	110.7
Dresses	1000 units	4 535	3 935	2 481	2 379	1 574	34.7	66.2
Skirts	1000 units	931	915	402	381	369	39.6	96.8
Trousers	1000 units	3 350	3 021	1 978	2 016	1 982	59.2	98.3
Blouses	1000 units	6 385	4 881	3 780	3 020	2 705	42.4	89.6

Between 2018 and 2022, the manufactured production of all women's clothing ranges decreased significantly. In 2022, compared to 2018, the production of dresses decreased by 65.3%, the production of coats, jackets and similar articles for women and girls – by 64.3%, the production of skirts – by 60.4%, the production of blouses – by 57.6%, and the production of trousers – by 40.8%.

In 2022, blouses accounted for the largest share of women's clothing assortment, as in 2018. In 2022, this share amounted to 29.1% and was lower by 4.8 percentage points compared to 2018. In the analysed period, however, the share of jackets and costumes increased – from 14.9% to 25.5%, as well as the share of trouser production – from 17.8% to 21.3%.

Chart 24. Structure of manufactured production of women's wearing apparel



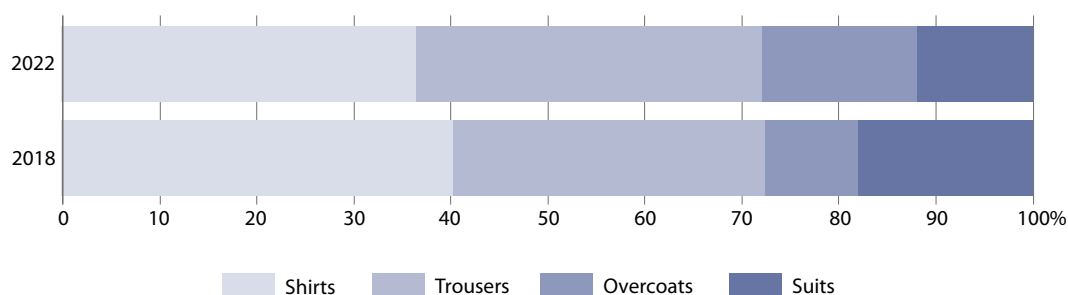
Analysing the production of men's clothing made of woven and knitted fabrics, the most significant was the production of shirts, which in 2022 amounted to 3,069 thousand units, the second product in terms of production volume were trousers – 2,980 thousand units, and the third – outerwear – 1,343 thousand units.

Table 29. Manufactured production of men's wearing apparel

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Outerwear	1000 units	1 297	1 132	893	1 029	1 343	103.5	130.4
Jackets and suits	1000 units	2 415	1 923	1 048	867	993	41.1	114.5
Trousers	1000 units	4 321	3 687	2 596	3 009	2 980	69.0	99.0
Shirts	1000 units	5 421	4 940	3 203	2 988	3 069	56.6	102.7

In the analysed period, the production of men's clothing made of woven and knitted fabrics was systematically decreasing. Compared to 2018, the production of jackets and suits (by 58.9%), shirts (by 43.4%), and trousers (by 31.0%) decreased the most. The exception was the production of outerwear, which recorded an increase of 3.5% compared to 2018.

Chart 25. Structure of manufactured production of men's wearing apparel

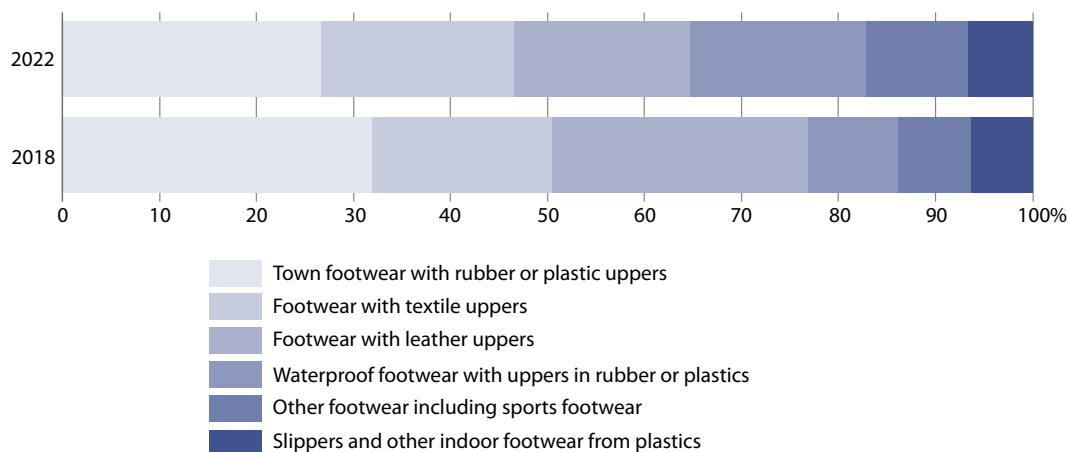


Compared to 2018, the structure of men's clothing production made of woven and knitted fabrics has changed. The share of outerwear production increased from 9.6% in 2018 to 16.1% in 2022, while the share of jackets and suits decreased by 6.6 p.p. and shirts – by 3.7 p.p.

Table 30. Manufactured production of footwear by type

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Town footwear with rubber or plastic uppers	1000 pairs	13 886	11 358	9 212	5 428	6 728	48.5	123.9
Footwear with leather uppers	1000 pairs	11 456	9 843	6 714	5 832	4 568	39.9	78.3
Footwear with textile uppers	1000 pairs	8 073	7 212	5 310	5 323	4 983	61.7	93.6
Waterproof footwear with uppers in rubber or plastics	1000 pairs	4 051	3 958	3 401	5 178	4 584	113.2	88.5
Slippers and other indoor footwear from plastics	1000 pairs	2 702	1 911	1 588	1 744	1 636	60.5	93.8
Other footwear including sports footwear	1000 pairs	3 261	2 593	2 623	2 721	2 649	81.2	97.4

Footwear production in Poland had a downward trend. In the analysed period, the largest decline in footwear production was recorded in 2020 – by 21.8% compared to the previous year. In 2022, total footwear production decreased by 42.1% compared to 2018 and compared to 2021 – by 4.1%. Taking into account the production of individual types of footwear, only the production of waterproof footwear made of rubber or plastics increased in the analysed period – by 13.2%. In the remaining footwear assortment, the largest decreases in production were recorded for footwear with uppers made of leather – by 60.1%, footwear with uppers made of rubber or plastic – by 51.5%. Compared to the previous year, in 2022 only footwear with uppers made of rubber or plastic increased (by 23.9%).

Chart 26. Structure of manufactured production of footwear by type

The largest share of the production of town footwear with uppers made of rubber or plastic, which accounted for 2018 amounted to 32.0% and decreased to 26.8% in 2022. In the analysed period, the share of footwear production with leather uppers also decreased – from 26.4% to 18.2% in favour of a significant increase in the share of waterproof footwear made of rubber – from 9.3% in 2018 to 18.2% in 2022.

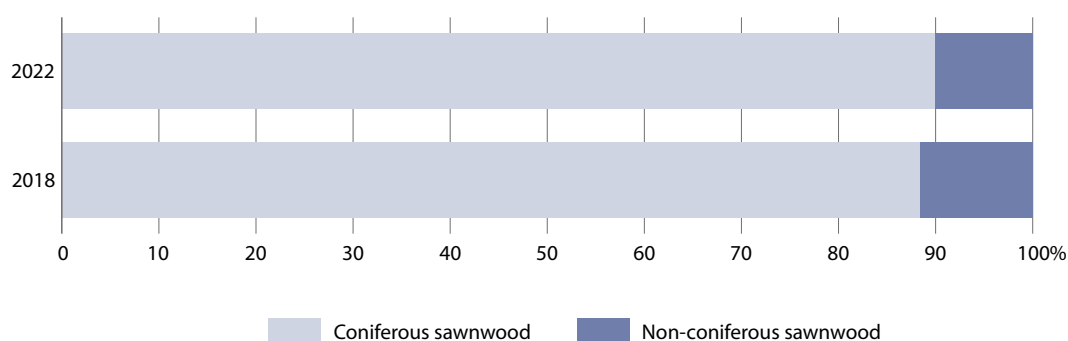
2.4. Products of wood and paper industry

The wood and paper industry products include, among others sawn and chipped wood, wood-based veneer and boards, ready-made floor boards, carpentry and carpentry products for construction, wooden packagings, pulp paper and card-board, paper and cardboard products such as toilet and sanitary products, paper stationery and wallpaper.

In Wood and products of wood and cork; articles of straw and plaiting materials division and Paper and paper products division, in the annual survey for 2022, 193 products were statistically observed, and manufactured production was reported for 152 products.

In 2022 production of sawnwood reached 4,698,389 m³, that is 5.0% less than in 2018. In 2022, coniferous sawnwood was mainly produced (4,233,983 m³), while non-coniferous sawnwood production (464,406 m³) accounted for 9.9% of total sawnwood production, and its share decreased by 1.5 p.p. compared to 2018. Over the last five years, there was a decline in the production of coniferous sawnwood and non-coniferous sawnwood, respectively – by 3.3% and 17.8%. In 2022, 43.9% of coniferous sawnwood production was pine wood (*Pinus* spp.) sawn or chipped lengthwise, sliced or peeled, of thickness exceeding 6 mm. Whereas, 99.4% of non-coniferous sawnwood production was wood, sawn or chipped length-wise, sliced or peeled, of a thickness exceeding 6 mm (excluding coniferous and tropical woods and oak blocks, strips and friezes).

Chart 27. Structure of manufactured production of sawnwood

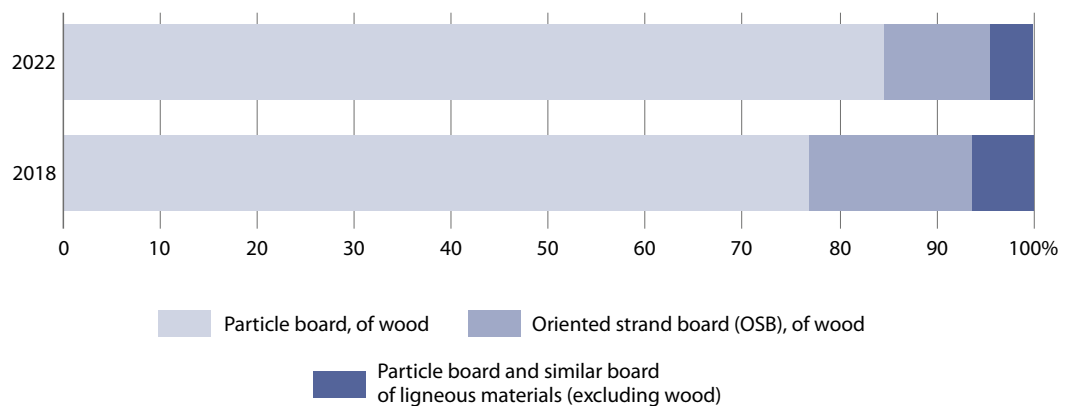


Compared to 2021, in 2022 there was a decrease in production in the group of selected wood industry products, the largest was observed for particle boards – by 17.9%, and the smallest for plywood – by 1.3%. Compared to 2018, only fibreboards and particle boards had a slight increase in production, respectively – by 0.9% and 0.3%, while the production of other selected products decreased, mainly for flooring materials – by 22.6%. In 2022, the production of flooring materials also decreased compared to 2021 – by 12.1%, and 92.3% of the production was made up of other wood flooring materials, (excluding coniferous wood and bamboo). The production of wooden windows and doors in 2022 decreased both in 2018 and 2021, for wooden windows – by 4.0% and 2.6% respectively and for wooden doors – by 7.6% and 13.3% respectively.

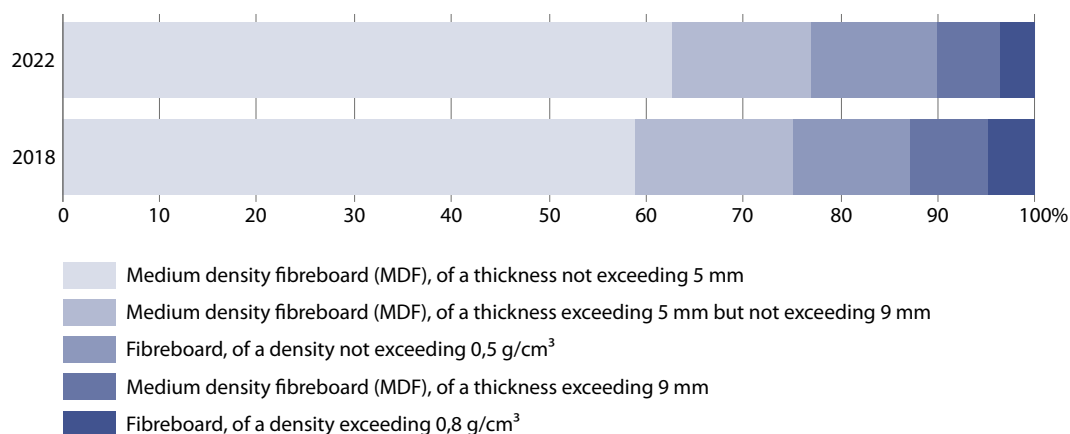
Table 31. Manufactured production of selected products of wood industry

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Sawnwood	dam ³	4 944	4 953	4 666	5 001	4 698	95.0	93.9
Flooring materials	dam ³	137	114	119	121	106	77.4	87.9
Plywood	dam ³	593	532	493	549	542	91.5	98.7
Particle board	dam ³	5864	6588	6571	7160	5880	100.3	82.1
Fibreboards	dam ³	4 919	4 864	4 753	5 750	4 964	100.9	86.3
Wooden windows	1000 units	3 146	2 966	2 871	3 098	3 018	96.0	97.4
Wooden doors	1000 units	6 433	6 200	6 215	6 854	5 941	92.4	86,7

In the analysed period, the largest share in production of particle board was held by particle board of wood, whose share increased by 7.6 p.p. over the last five years, while decreasing the share of oriented strand board (OSB), of wood and particle board and similar boards of ligneous materials (excluding wood), respectively – by 5.6 p.p., and 2.0 p.p.

Chart 28. Structure of manufactured production of particle board

In the period that was under review, the largest share in production of fibreboards was held by medium-density fibreboards (MDF), with a thickness not exceeding 5 mm, whose share, similar with fibreboards with a density not exceeding 0.5 g/cm³, increased by 4.0 p.p. and 0.6 p.p. respectively, compared to 2018. Share of other types of fibreboards decreased compared to 2018, with the largest decrease – by 2.0 p.p. – medium density fibreboards (MDF), with a thickness exceeding 5 mm but not exceeding 9 mm were recorded by second largest market share.

Chart 29. Structure of manufactured production of fibreboards

In the group of wooden packagings, flat pallets were the dominant product, with 2,070 thousand tonnes produced in 2022, that was 3.1% more than in 2021. In the period under review, the volume of box pallets production fell until 2021 after a slight increase in 2019, and in 2022 it increased by 73.5% to the previous year (the decrease compared to 2018 was 24.4%). In the analysed period, the production of cases, boxes was increasing until 2020, after which there was a decrease in the production, that lasted until 2022 and amounted to 2.4% compared to 2021. Over the entire period under review, the production of cases, boxes increased by 43.2%. In 2022 production of cable-drums of wood was both higher than in 2018 and 2021, respectively by 29.2% and by 19.5%.

Table 32. Manufactured production of wooden packagings

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2022	2021=100
Flat pallets	1000 t	1 909	1 831	1 820	2 009	2 070	108.5	103.1
Box pallets	1000 t	82,6	87,6	43,2	36,0	62,5	75.6	173.5
Cases, boxes	1000 t	59,5	83,9	98,5	87,3	85,2	143.2	97.6
Cable-drums of wood	1000 t	42,2	46,7	38,0	45,7	54,6	129.2	119.5

The Paper and paper products division covers the production of paper and products made of paper and cardboard. In 2022, 128 products and assortment groups were covered by the survey and the manufactured production was reported for 99 products.

Table 33. Manufactured production of woodpulp and paper

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Soda or sulphate chemical woodpulp other than for dissolving grades	1000 t	961	938	982	995	984	102.4	98.9
Uncoated, unbleached kraftliner	1000 t	925	632	656	625	606	65.5	97.0
Paper and paperboard	1000 t	4856	4880	5129	5326	5237	107.8	98.3

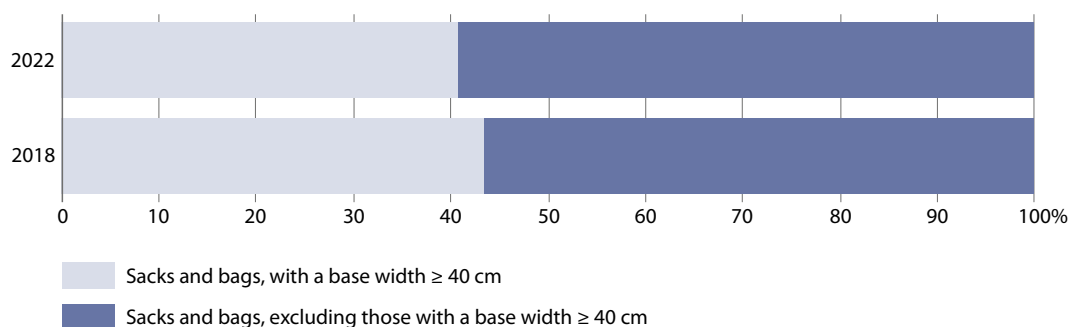
In the analysed period, woodpulp production was at the level of 961 thousand tonnes in 2018, reached the lowest level of production in 2019 – 938 thousand tonnes, then increased to 995 thousand tonnes in 2021. In 2022, a decrease in production was again recorded (by 1.1%). The production of uncoated, unbleached kraftliner decreased in the analysed period. In 2022, there was a decrease in the production of this type of paper by 34.5% compared to 2018 and by 3.0% compared to 2021. The production of paper and paperboard in 2022 increased by 7.8% compared to 2018, while it decreased compared to 2021 by 1.7%.

Table 34. Manufactured production of paper packagings

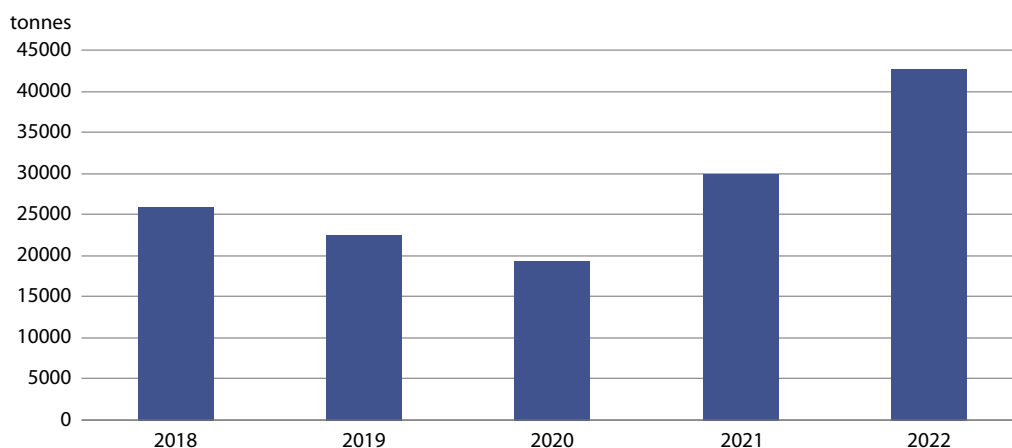
Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Corrugated paperboard	1000 t	2286	2319	2391	2629	2580	112.9	98.1
Sacks and bags of paper	1000 t	171	188	171	178	204	119.3	114.6
Cartons, boxes and cases, of corrugated paper or paperboard	1000 t	2520	2615	2583	2964	6520	258.7	220.0
Folding cartons, boxes and cases of non-corrugated paper or paperboard	1000 t	473	567	660	758	793	167.7	104.6

The production of corrugated paperboard increased systematically until 2021, when it reached 2,629 thousand tonnes. In 2022, there was a slight decrease – by 1.9% compared to 2021. In the analysed period, a significant increase in the production of sacks and bags of paper was observed, related to, among others, with the increasing importance of e-commerce and the growing interest in recyclable packagings. The highest increase of production was recorded for cartons, boxes and cases, of corrugated paper or paperboard – by 158.7% by 2018 and by 120.0% by 2021. In the production of cartons made of non-corrugated paperboard, there was also a significant increase compared to 2018 – by 67.7%, but in relation to 2021 it amounted to only 4.6%. In 2022, the production of paper sacks and bags increased by 14.6% compared to 2021 and by 19.3% compared to 2018, reaching the highest level in the analysed period – 204 thousand tonnes.

Chart 30. Structure of manufactured production of sacks and bags of paper



In the years 2018–2022, there were minor changes in the production structure of paper sacks and bags. In 2022, in the assortment group of paper sacks and bags, the share of sacks and bags with a width at the base of 40 cm or more decreased by 2.9 p.p. for other paper sacks and bags, the share of which was 59.2%.

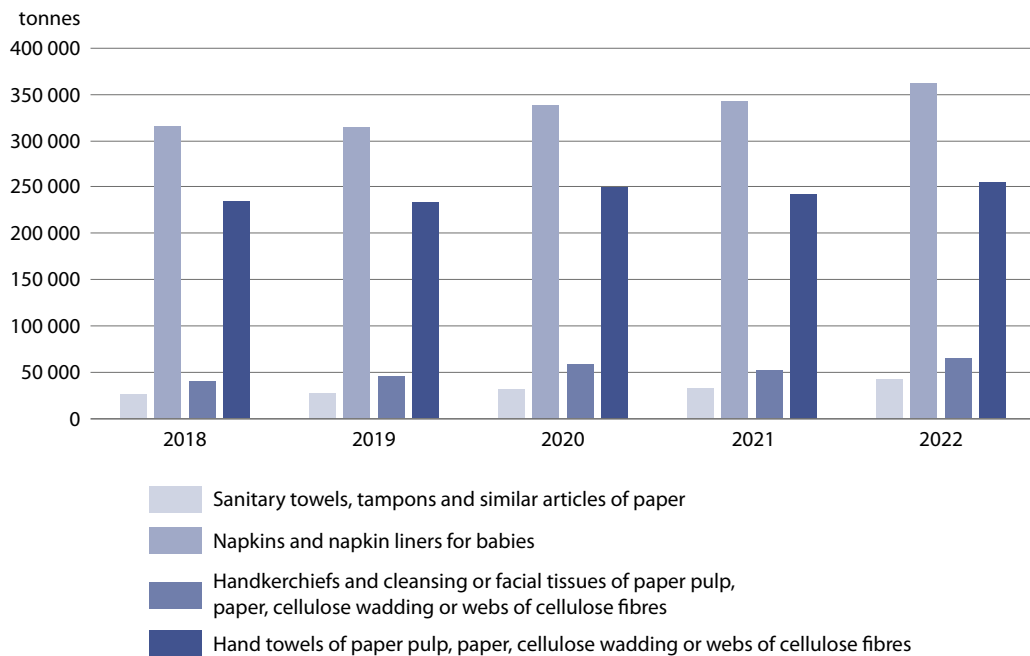
Chart 31. Manufactured production of trays, dishes, plates, cups and the like of paper or paperboard

The production of paper plates, trays, cups and similar items reached the lowest level in the analysed period in 2020 – 19,335 tonnes. In the following years, there was a significant increase in production compared to the previous year – by 54.2% in 2021 and 43.1% in 2022, when production amounted to 29,825 tonnes and 42,687 tonnes, respectively.

Table 35. Manufactured production of sanitary products

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Toilet paper	1000 t	393	395	418	399	478	121.6	119.8
Sanitary towels, tampons and similar articles of paper	tonnes	26 554	27 280	30 538	32 407	43 244	162.9	133.4
Napkins and napkin liners for babies	tonnes	315 834	313 907	339 047	342 709	361 394	114.4	105.5
Napkins and napkin liners for babies	1000 units	8 030 559	7 944 951	8 371 164	8 345 558	9 019 599	112.3	108.1
Handkerchiefs and cleansing or facial tissues of paper pulp, paper, cellulose wadding or webs of cellulose fibres	tonnes	40 096	45 247	58 752	52 346	65 189	162.6	124.5
Hand towels of paper pulp, paper, cellulose wadding or webs of cellulose fibres	tonnes	234 258	233 124	250 060	242 353	254 760	108.8	105.1

In the analysed period, a significant increase in production in the group of paper hygiene products was recorded for tissues – by 62.6% compared to 2018 and for sanitary napkins, tampons and similar articles – by 62.9%. The highest increase in production in 2022 was recorded for sanitary towels and tampons – by 33.4%, the production of which also reached the highest level in the entire analysed period and amounted to 43 thousand tonnes. In the case of tissues, the highest increase in production compared to the previous year occurred in 2020 – by 29.8% and in 2022 – by 24.5%. The highest production increase in 2022 was also recorded for toilet paper – by 19.8%, and its production amounted to 478 thousand tonnes. The largest increase in the production of paper towels was recorded in 2020 – by 7.3%. Among all hygiene products, the smallest increase in production in the analysed period was recorded for paper towels – by 8.8% compared to 2018.

Chart 32. Manufactured production of sanitary products of paper and paper pulp

2.5. Chemicals and pharmacy 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. In the Chemicals and chemical products division, 656 products and assortment groups were covered by the survey, including data on manufactured production for 453 products.

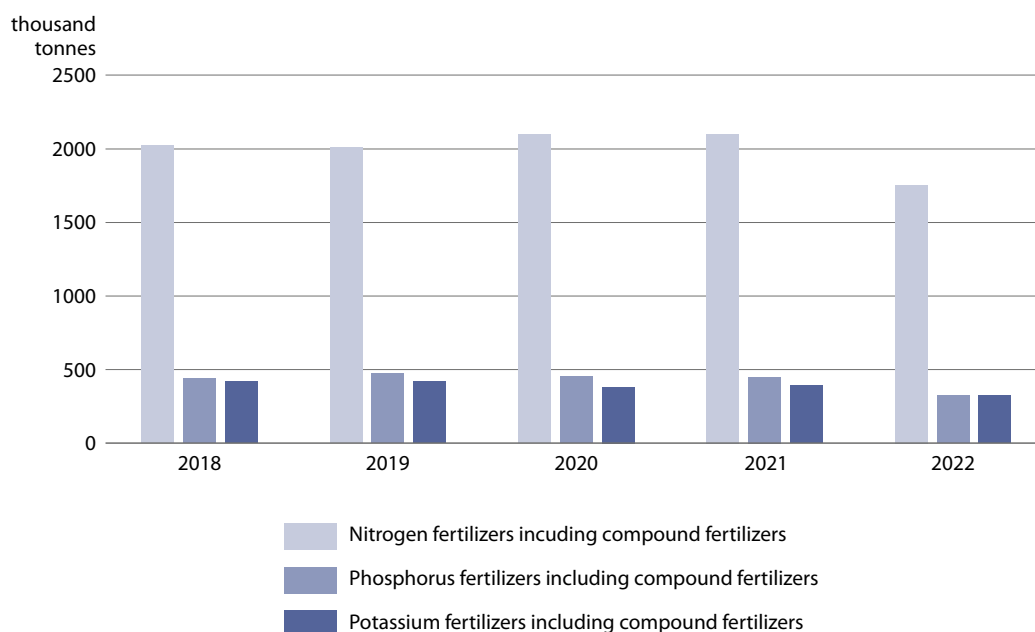
The Basic chemicals group includes products that are the starting point for a wide variety of chemical processes – these are among others: technical acids, sodium hydroxide, ammonia. In 2022, compared to 2018, the production of phosphoric acids decreased by 33.0%, nitric acid by 12.0%, sulphuric acid – by 10.2%, hydrochloric acid – by 9.6% and ammonia – by 16.9%. Production in 2022, compared to 2021, decreased for phosphoric acids by 31.9%, nitric acid by 17.4%, sulphuric acid by 10.2% and ammonia by 18.9%. In the case of hydrochloric acid, the largest decrease in production was recorded in 2020 compared to 2019 – by nearly 10%.

Production of sodium hydroxide in the analysed period increased by 16.6% and amounted to 455 thousand tonnes of NaOH in 2022.

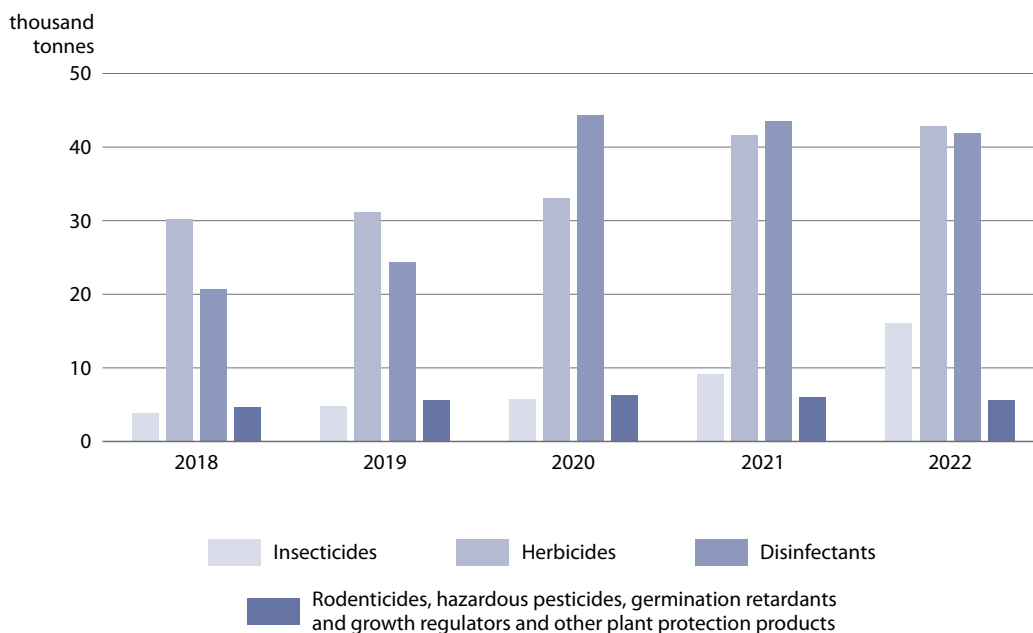
Table 36. Manufactured production of basic chemicals

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Hydrochloric acid	1000 t HCl	48.1	50.7	44.9	43.7	43.5	90.4	99.6
Sulphuric acid	1000 t H ₂ SO ₄	1 863	1 886	1 800	1 865	1 674	89.8	89.8
Phosphoric acid	1000 t P ₂ O ₅	276	296	272	272	185	67.0	68.1
Nitric acid	1000 t HNO ₃	2 310	2 331	2 413	2 460	2 033	88.0	82.6
Anhydrous ammonia	1000 t NH ₃	2 535	2 450	2 646	2 597	2 106	83.1	81.1
Sodium hydroxide	1000 t NaOH	390	401	446	435	455	116.6	104.4

Artificial fertilizers are among the most important products of the chemical industry, their production is directly related to food production. In 2018–2022, the production of fertilizers remained at a similar level, with slight fluctuations, however, in 2022, there was a noticeable decline in their production. This was related to the Russian-Ukrainian war, and the increase in natural gas prices, which affected the price of the product and thus reduced demand, as well as the fact that both of these countries were important importers of Polish fertilizers. In 2022, compared to the previous year, the production of nitrogen fertilizers decreased by 16.5%, phosphorus fertilizers by 27.7%, and potassium fertilizers by 18.1%.

Chart 33. Manufactured production of chemical fertilizers

There was also an increase in pesticide production during the study period. Its large jump in 2020 was due to a significant increase in the production of disinfectants due to the COVID-19 pandemic, which are included in this grouping of products. The second important group of products among pesticides were herbicides, whose production after the pandemic period again exceeded the production of disinfectants and amounted to 42.9 thousand tonnes in 2022. The third important group among pesticides were insecticides, the production of which steadily increased in the period under review and amounted to 16.1 thousand tonnes in 2022, which translated into a recorded increase of 317.0% compared to 2018.

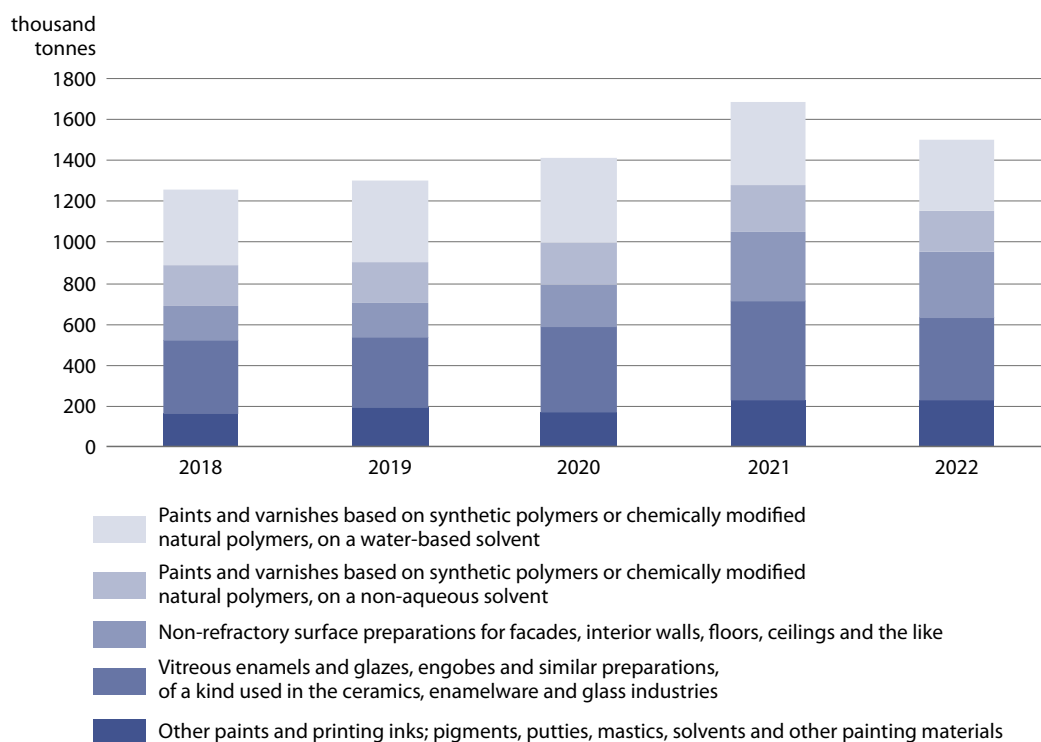
Chart 34. Manufactured production of pesticides

Another important product of the chemical industry is plastics, which are used in all branches of industrial production. Their production in 2022, compared to 2021, decreased slightly by 0.7% due to high commodity prices (oil and natural gas). The largest decrease in production was recorded in the polyamide group – by 15.0%. Compared to 2018, the production of plastics increased by 6.1%. The highest increase was recorded for polyurethanes – by 16.9%, polystyrene – by 16.5%, polypropylene – by 16.3%.

Table 37. Manufactured production of plastics

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Total plastics	1000 t	3457	3627	3695	3693	3668	106.1	99.3
polyethylene	1000 t	346	383	348	266	348	100.6	130.6
polystyrene	1000 t	146	175	168	183	170	116.5	93.1
polyvinyl chloride	1000 t	409	391	426	374	432	105.5	115.6
polypropylene	1000 t	287	351	351	313	334	116.3	106.8
polyamides	1000 t	194	192	202	240	204	105.2	85.0
polyurethanes	1000 t	29.0	33.8	30.7	29.7	33.9	116.9	114.0

The production of paints, varnishes and other painting products grew in the analysed period until 2021, reaching the value of 1,690 thousand tonnes. It was only in 2022 that a decrease was recorded compared to the previous year – by 11.3%, while the volume of production still remained at a fairly high level – 1,499 thousand tonnes. The decline observed in 2022 was mainly due to the production of acrylic and vinyl polymer-based paints based on aqueous solvents, which decreased by 17.1% compared to 2021. The largest decrease in production was recorded in the production of oil paints – by 48.9%, however, it was a marginal product, accounting for less than 0.3% of paint production. Compared to 2018, the production of manufactured paints increased by 19.2%. In this assortment group, the most noticeable was the increase in the production of non-refractory surface preparations for facades, walls, etc. – by 91.5%.

Chart 35. Manufactured production of paints, varnishes and other painting products

An important position among the products of the chemical industry is occupied by soaps, detergents and washing and cleaning agents. In 2022, the largest increase in production compared to 2018 was recorded in the assortment group soap in the form of flakes, granules or powders – by 235.1%.

Table 38. Manufactured production of cleaning products

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Soap	1000 t	243	263	319	293	309	127.0	105.4
soap in the form of bars, pieces, etc.	1000 t	15.4	17.1	28.5	33.4	28.5	185.4	85.4
soap in the form of flakes, granules or powders	1000 t	5,8	5,2	11,7	7,3	19,4	335.1	265.4
soap in other forms (pastes, liquids, pieces of paper or cloth saturated with soap, etc.)	1000 t	129	149	151	144	155	120.2	107.2
Detergents and laundry preparations	1000 t	987	982	1088	1080	1092	110.6	101.1

Another important group of products in this division are cosmetics. In 2022, compared to 2018, only the production of hair care cosmetics fell by 12.1%. On the other hand, an increase was recorded for beauty and cosmetic preparations including lip preparations (lipsticks), eye preparations or cosmetic powders – by 29.2% and perfumes – by 20.3%. Compared to 2021, only perfume production decreased by 17.0%.

Table 39. Manufactured production of cosmetics

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Hair care cosmetics	1000 t	175	175	175	152	153	87.9	100.6
Perfume	1000 litres	312	530	664	453	376	120.3	83.0
Beauty and cosmetic preparations	milion PLN	3 914,5	3 922,4	3 845,6	4 373,2	5 058,1	129,2	115,7

In million PLN given value of sold production.

In the division Basic pharmaceutical substances, medicines and other pharmaceutical products, 58 products were covered by the industrial production survey, of which 41 were shown to be manufactured. Due to the large quantitative diversity of production (some substances are produced in quantities of many tonnes per year, for others it is kilograms or even grams), for most of the products only the value of production in thousands of PLN was collected. In 2022, compared to 2021, the largest increase in production was recorded for hormone-containing drugs, but their production did not reach the level of five years ago. Drugs containing alkaloids or their derivatives were the product group for which the largest increase in production was recorded compared to 2018 – by 160.8%.

Table 40. Sold production of selected groups of medicines

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Medicines containing penicillins or other antibiotics	milion PLN	444.4	448.3	434.1	479.6	525.0	118.1	109.5
Medicines that contain insulin but do not contain antibiotics	milion PLN	168.8	136.6	174.4	151.2	196.6	116.5	130.1
Hormone-containing medicines	milion PLN	235.3	124.9	104.7	86.3	182.6	77.6	211.6
Medicines containing alkaloids or derivatives thereof	milion PLN	538.4	661.6	664.4	731.7	1404.3	260.8	191.9
Medicines containing vitamins, provitamins, their derivatives and mixtures thereof	milion PLN	253.2	285.7	336.7	227.6	284.0	112.1	124.8

This division also includes some dressings and first aid. Their production significantly increased in recent years, with the exception of one category (cotton wool, gauze, bandages with pharmaceuticals), for which there was a decrease of 8.9% compared to 2018. In 2022, the largest increase in production was recorded for first aid kits and first aid kits both compared to 2021 – by 30.8% and to 2018 – by 74.3%.

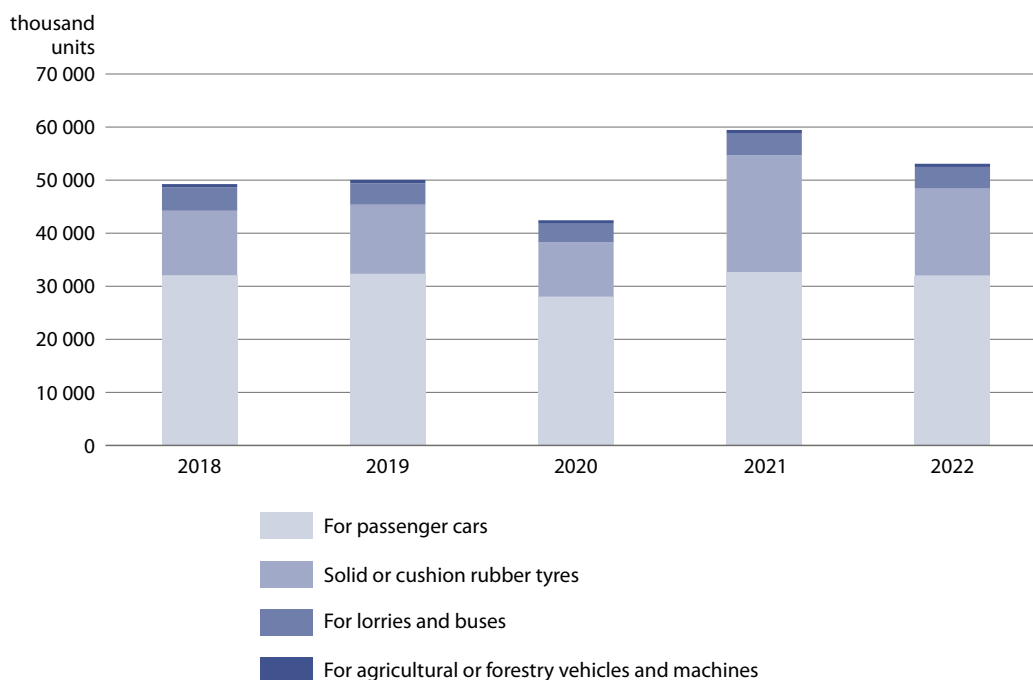
Table 41. Manufactured production of selected dressings containing pharmaceutical substances

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Adhesive dressings or similar articles, impregnated or coated with pharmaceutical substances	milion PLN	160.9	187.7	206.0	214.0	226.8	140.9	106.0
Sterile surgical catgut	milion PLN	13.4	14.4	11.8	15.1	19.1	142.6	126.3
Cotton wool, gauze, bandages, etc., with pharmaceutical substances	milion PLN	151.6	163.7	163.5	157.3	138.1	91.1	87.8
First aid kits	milion PLN	31.1	30.3	33.1	41.4	54.2	174.3	130.8

2.6. Rubber and plastic products

Products of the rubber industry and plastic products include, among others: rubber tyres and inner tubes, plates, sheets, plastic pipes and profiles, plastic packagings, plastic products for construction. In the Rubber and plastic products division, there were observed 185 products and product groups. In 2022, data on production was presented for 172 products.

From 2018 to 2022, production of rubber tyres showed a variable tendency in subsequent years. In 2019, there was a slight increase by 1.6% compared to the previous year, while in 2020 there was a significant decrease by 15.2% compared to the previous year (there were produced 42,424 thousand units). The reduction in tyres production in 2020 was the result of a decline in car production. In the following year, production of rubber tyres increased by 40.1% compared to 2020, but in 2022 it decreased again by 10.7%. Despite such significant changes in production dynamics, in 2022 compared to 2018, there was an increase in production by 7.8%. Tyres for passenger cars accounted for 60.2% of total tyres, and their production in 2022 was 31,979 thousand units.

Chart 36. Manufactured production of tyres by type

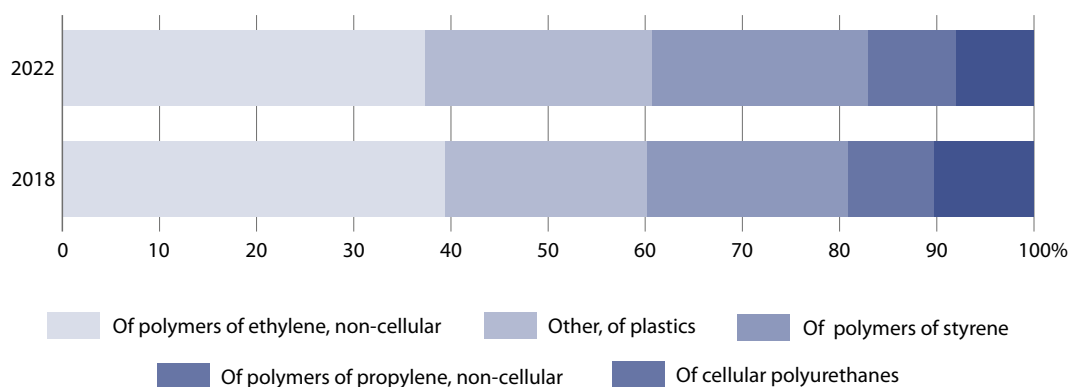
In the analysed period, among other rubber products, the largest group of products were rubber-to-metal bonded articles for tractors and motor vehicles for which the production volume in 2022 reached 59,435 tonnes and compared to 2018 was lower by 20.0%. The production of rubber conveyor belts systematically decreased until 2021, and although in 2022 there was an increase by 11.4% in comparison to the previous year, throughout the analysed period it decreased by 24.5%. The production of tubes, pipes and hoses of rubber decreased until 2020. In 2021, there was a slight increase compared to the previous year by 4.8%, and in 2022 – another decrease by 5.8% compared to the previous year to 46,441 tonnes. The production of seals of vulcanised rubber systematically increased to the level of 62,104 tonnes in 2021 and despite the observed decrease in production in 2022 by 8.4% compared to the previous year, production compared to 2018 increased by 12.5%.

Table 42. Manufactured production of rubber goods

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Plates, sheets and strip of vulcanised rubber	tonnes	16 157	21 610	17 928	19 680	11 991	74.2	60.9
Tubes, pipes and hoses, of rubber other than hard rubber	tonnes	50 689	48 111	47 037	49 306	46 441	91.6	94.2
Rubber conveyor belts	tonnes	66 917	54 721	47 326	45 377	50 547	75.5	111.4
Rubberized textile fabrics, except tyre cord fabric	tonnes	1 559	2 087	1 393	747	525	33.7	70.3
Hygienic or pharmaceutical articles of rubber (excluding sheath contraceptives)	tonnes	492	620	520	467	451	91.8	96.6
Seals, of vulcanised rubber	tonnes	50 546	56 793	59 574	62 104	56 878	112.5	91.6
Rubber-to-metal bonded articles for tractors and motor vehicles	tonnes	74 284	67 754	57 156	64 712	59 435	80.0	91.8
Moulded rubber articles for tractors and motor vehicles	tonnes	25 678	21 034	17 343	19 747	22 079	86.0	111.8

In the group of plastic products, the highest production in 2022 was recorded for plastic plates, sheets, films, foils, tapes and belts (1,893,550 tonnes). The second largest production volume was the production of plastic doors, windows, their frames and thresholds (612,029 tonnes), and the third largest production volume was the production of plastic pipes, cables and hoses (541,459 tonnes).

In the analysed period, the production of plastics plates, sheets, films, foils and strips systematically increased and in 2022, compared to 2018, it was higher by 19,1%. The largest share in this assortment group was held by plates, sheets, films, foils, tapes and strips of non-cellular ethylene polymers – 37.4% in 2022. Among other plastic plates, sheets, films, foils, tapes and belts, there can be distinguished plates, sheets, films, foils and strip of non-cellular polyethylene terephthalate, the share of which in the total production of plastic plates in 2022 was 7.5% and plates, sheets, films, foils and strips of non-cellular polymers of vinyl chloride with a share of 6.3%.

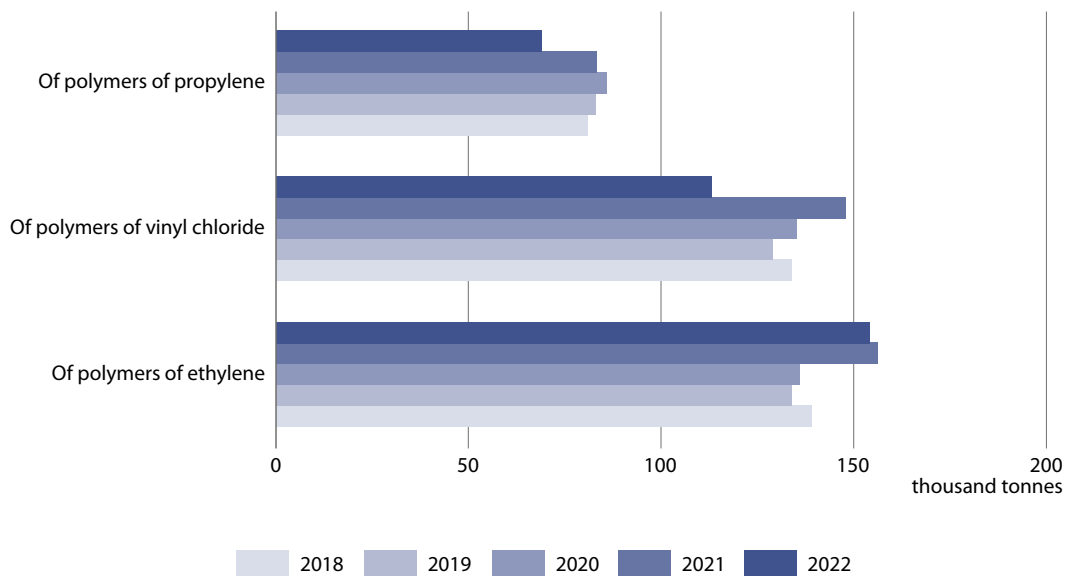
Chart 37. Structure of manufactured production of plates, sheets, film, foil and strip by types

In the analysed period, the production of plastic doors, windows, their frames and thresholds systematically increased. The greatest impact on this had the production of plastic windows, whose share in the production volume of this product group was 89.4%. In 2022 there were produced 9,927 thousand units of plastic windows and compared to 2018 it was an increase by 17.2%.

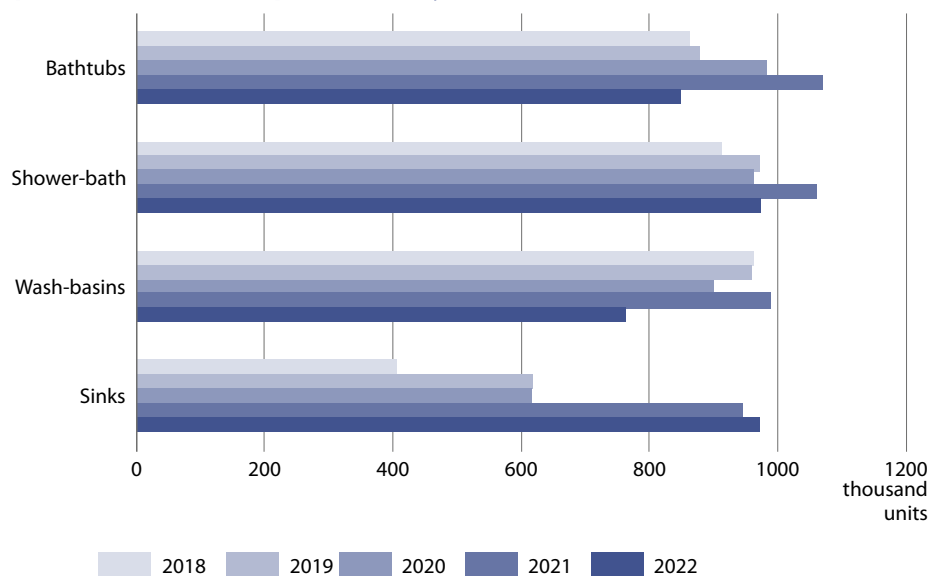
Table 43. Manufactured production of plastic windows and doors for building industry

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Plastic windows	1000 units	8 468	8 645	9 169	9 894	9 927	117.2	100.3
Plastic doors	1000 units	339	386	453	415	441	130.3	106.3

In the group of plastic pipes, wires and hoses, the highest production in 2022 was recorded for pipes, wires and hoses of ethylene polymers – 154,839 tonnes. Compared to the previous year, it decreased by 7.8%, but compared to 2018, there was an increase by 4.3%. In second place in terms of production volume are pipes, wires and hoses of polymers of vinyl chloride, during the analysed period, the production of these pipes was irregular. In 2019, there was a decrease by 4.1% in comparison to the previous year. In 2020 and 2021, there was observed growth respectively by 4.7% and 9.0%. In 2022, production of pipes, wires and hoses of polymers of vinyl chloride reached 112,585 tonnes and compared to 2021 it was lower by 13.3% and compared to 2018 – by 16.0%.

Chart 38. Manufactured production of selected plastic tubes

Plastic sanitary products such as bathtubs, washbasins, lavatory pans and covers, flushing cisterns and similar sanitary ware as well as plastic windows and doors, are among the most typical plastic construction products. During the analysed period, the production of plastic sanitary products systematically increased until 2021. In 2022, production was reported at 97,195 tonnes, and compared to the previous year, there was a decrease by 26.1%, but compared to 2018, production was higher by 45.5%. In 2022, the highest production was recorded for plastic shower-bath – 974,342 units (a decrease by 8.2% compared to the previous year). Slightly fewer were produced plastic sinks – 972,126 units (an increase by 2.7% compared to 2021), and the production of plastic bathtubs and washbasins amounted respectively to 842,006 and 763,785 units (a decrease respectively by 11.3% and by 12.8% in comparison to the previous year).

Chart 39. Manufactured production of selected plastic sanitary ware

Another important group of plastic products is packagings. Among plastic packagings a significant role played production of plastic sacks and bags, for which the highest increase in production was recorded in 2021 – by 11.9%. In 2022 there was a slight decrease in production – by 1.4%, but compared to 2018 it was higher by 8.1% and amounted to 455 thousand tonnes. In 2022, the production volume of plastic boxes, cases, crates and similar articles reached 338 thousand tonnes and compared to 2018 it was an decrease by 3.7%, and in comparison to the previous year – by 9.0%.

Table 44. Manufactured production of selected plastic packages

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Sacks and bags	1000 t	421	418	412	461	455	108.1	98.6
Plastic boxes, cases, crates and similar articles	1000 t	351	331	364	371	338	96.3	91.0
Articles for the conveyance or packagings of goods	1000 t	315	286	288	303	293	93.2	96.8
Plastic carboys, bottles, flasks and similar articles	milion units	5 787	6 014	5 696	5 624	6 277	108.5	111.6

The production of plastic carboys, bottles, flasks and similar articles in 2019 was higher by 3.9% compared to the previous year, but in 2020 and 2021 there was a decrease in production – respectively by 6.3% and by 1.3%. In 2022, production increased again by 11.6% and compared to 2018 production – by 8.5%.

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

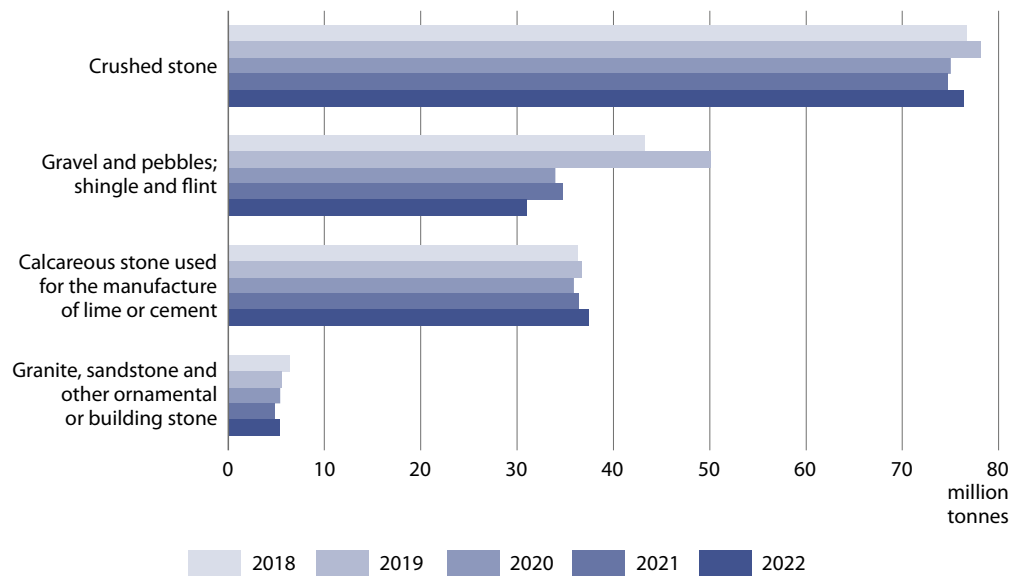
Non-metallic mineral products are products of the mining industry occurring in a raw state or subjected to mechanical processes such as crushing, sorting, grinding. This group includes chemical raw materials – native sulphur, salt, construction raw materials – e.g. limestone, granite, sand, gravel, marble and ceramic raw materials – e.g. dolomite, kaolin, clays.

Among the mineral products used for construction purposes, an important role is played by, among others, 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 2019 and 2022 (by 1.9% and 2.3%, respectively). In 2022, production amounted to 76,413 thousand tonnes, which was a decrease of 0.4% compared to 2018.

An important raw material used in the construction industry is also 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, an increase in the production of this product was recorded in 2019 and 2021 (by 16.0% and 2.1%, respectively). However, production declined in 2020 and 2022 (by 32.2% and 10.7%, respectively). Compared to 2018, production decreased by 28.3%.

Limestone and other calcareous stone used for the manufacture of lime or cement is also an important product used in construction. In the analysed period there was an increase in the production of this product group (except for 2020, when there was a 2.4% drop in production). In 2022, production amounted to 37,411 thousand tonnes and was higher by 2.7% compared to the previous year. Compared to 2018, production increased by 2.0%.

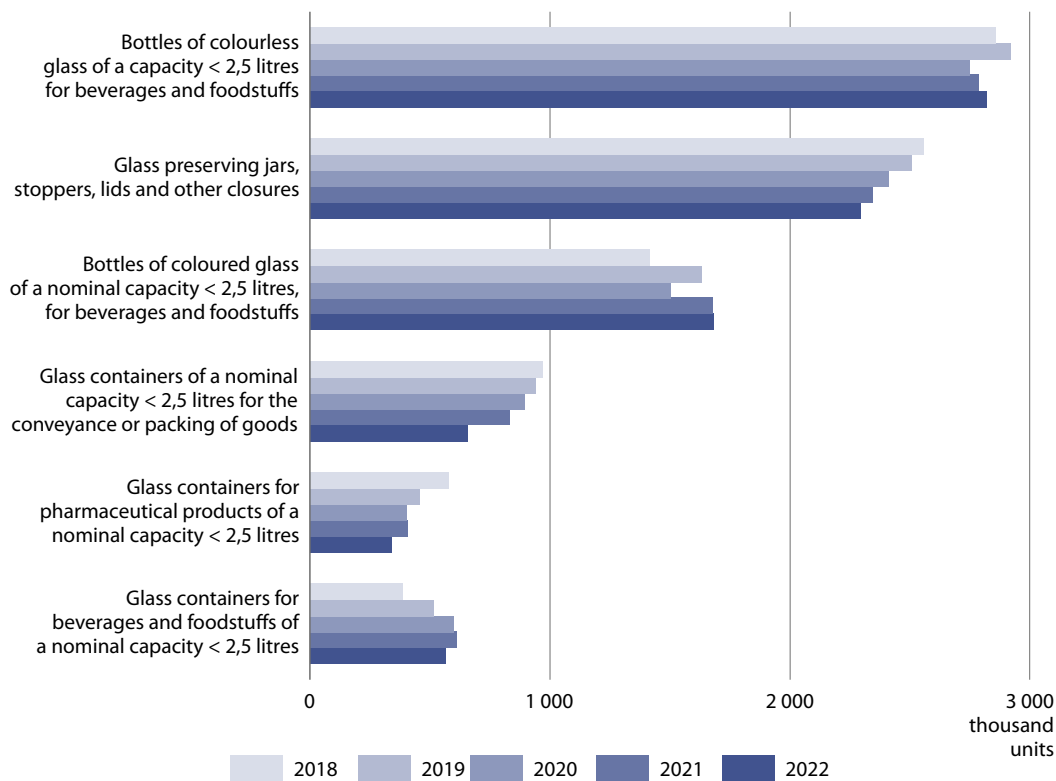
Granite, sandstone and other ornamental or building stone are also commonly used in construction, but an increase in the production of this product was recorded only in 2022, when production reached 5,328 thousand tonnes and was higher than in the previous year by 8.5%. During the entire analysed period of 2018–2022, production decreased by 16.4%.

Chart 40. Manufactured production of selected stones used for construction purposes

Products made from 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.

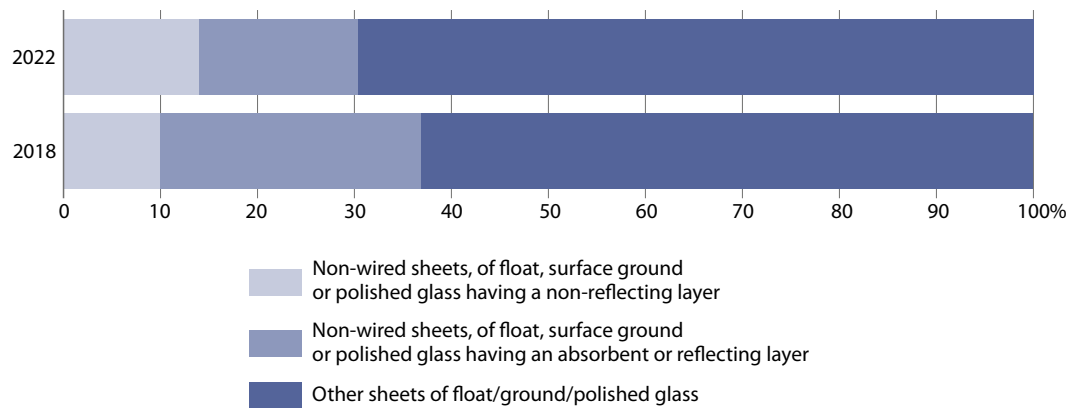
Among products made of non-metallic mineral raw materials, household glass is of great importance, including: glass preserving jars, stoppers, lids and other closures (including stoppers and closures of any material presented with the containers for which they are intended), the production of which increased in 2019 and 2021 (by 3.6% and 4.4%, respectively). In 2022, production reached the level of 8,763,309 thousand units and was by 2.3% lower compared to 2021. During the entire analysed period, the production increase was 4.8%. In 2022, the highest share in the production of household packagings made of glass (32.6%) was recorded for bottles of colourless glass of a capacity < 2,5 litres for beverages and foodstuffs, the production of which amounted to 2,857 million units. The production of glass preserving jars, stoppers, lids and other closures was slightly lower and it amounted to 2,555 million units, its share in the household glass group amounted to 29.2% and was by 1.8 p.p. higher than in 2018.

Chart 41. Manufactured production of selected glass packagings



An important product used on a large scale in construction is sheets of float glass and surface ground or polished glass, but not otherwise worked. In the years 2018–2022, a systematic increase in the production of this product was observed, in 2022, production increased slightly by 0.5% compared to 2021 and by 76.1% throughout the analysed period. In 2022, the highest share of production, similarly to 2018, was reported for other sheets of float/ground/polished glass, not elsewhere classified, however, in relation to 2021, their production decreased by 4.5%. During the entire analysed period, the production of the product increased by 94.4%.

Chart 42. Structure of manufactured production of sheets of float glass and surface ground or polished glass, but not otherwise worked



One of the most important products used in construction is cement. In the years 2018–2022, an increase in its production was recorded only in 2021 – by 3.0%. In 2022, production decreased slightly by 0.6% compared to the previous year, compared to 2018, cement production increased by 2.9%. A similar trend was observed for lime, where an increase in production was recorded only in 2021 – by 9.2%. In 2022, lime production reached 1,670 thousand tonnes and was lower both in relation to the previous year and 2018 – by 8.9% and 8.2% respectively.

In the years 2018–2022, a systematic increase in the production of non-refractory clay roofing tiles was observed. In 2022, 175,653 thousand units were produced, which resulted in an increase in production by 12.6% compared to the previous year and by 39.9% compared to 2018.

The production of ready-mixed concrete has changed over the last five years. An increase in production was recorded in 2019, 2021 and 2022. In 2022, production increased by 3.4% compared to the previous year, and compared to 2018, a decrease of 2.5% was recorded.

The production of mortars increased systematically in the analysed period until 2020. In the following two years, there was a decrease in production – by 8.1% in 2021 and by 9.9% in 2022. Compared to 2018, production decreased by 10.1%.

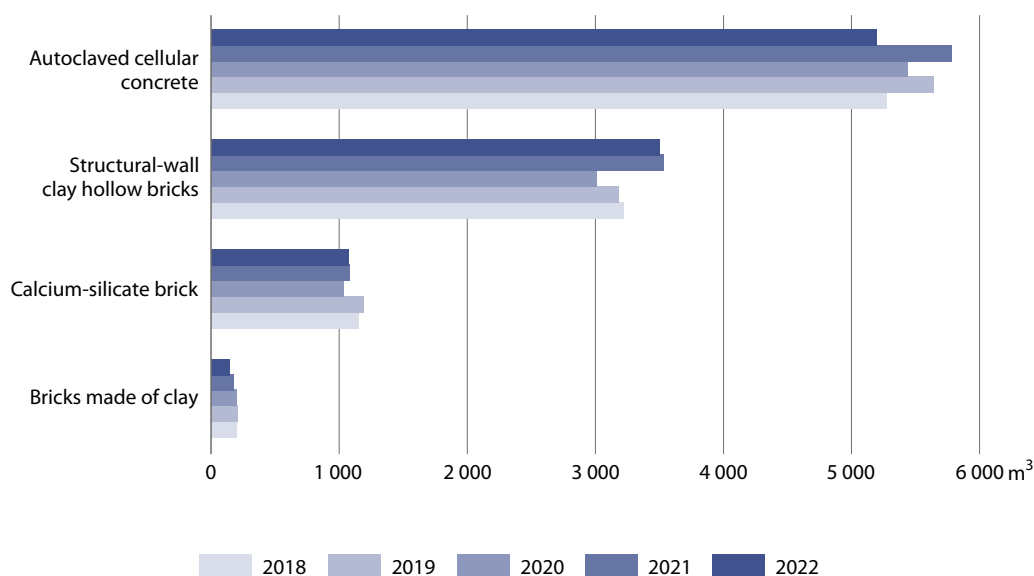
Among the building materials, building paper is also of great importance, the production of which increased in 2020–2022. In 2022, the production of building paper amounted to 77,463 thousand m² and was by 3.6% higher compared to the previous year. Compared to 2018, production increased by 2.3%.

Table 45. Manufactured production of selected construction materials

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Bricks	million bricks	677	668	577	592	575	85.0	97.2
Non-refractory clay roofing tiles	1000 units	125 551	127 665	148 199	156 059	175 653	139.9	112.6
Cement	1000 t	18 957	18 946	19 049	19 625	19 503	102.9	99.4
Lime	1000 t	1 820	1 777	1 677	1 832	1 670	91.8	91.1
Ready-mixed concrete	1000 t	58 422	58 765	51 690	55 056	56 937	97.5	103.4
Mortars	1000 t	5 340	5 683	5 793	5 325	4 799	89.9	90.1
Building paper	1000 m ²	75 694	72 410	73 859	74 788	77 463	102.3	103.6

One of the most popular materials used in construction is bricks, but the increase in the production of this product over the last 5 years was recorded only in 2021 – by 2.6%. In 2022, production reached 575 million bricks and was lower by 2.8% compared to the previous year and by 15.0% compared to 2018.

During the analysed period, a systematic decline in the production of bricks made of clay was observed. In 2022, production reached 71,045 thousand bricks and was lower in relation to both 2021 and 2018 by 16.8% and 24.2% respectively. The production of calcium-silicate brick in the analysed period increased only in 2021 (by 4.4%). In 2022 it amounted to 504,015 thousand bricks and was lower by 0.4% compared to the previous year and by 13.5% compared to 2018.

Chart 43. Manufactured production of small-sized construction materials

2.8. Basic metals and fabricated metal products

Basic metals division includes a wide range of metallurgical products such as raw steel, ferroalloys, thick sheets, thin sheets, strips and foils, pipes and pipes, bars and rods, profiles and the like. In 2022, 402 products were subject to statistical observation, and the production was recorded for 295 products.

Table 46. Manufactured production of crude steel

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Crude steel	1000 t	10 332	9 122	7 958	8 553	7 521	72.8	87.9
Electric non-alloy steel	1000 t	4 213	3 693	3 476	3 844	3 501	83.1	91.1
Unalloyed converter steel	1000 t	4 899	4 434	3 549	3 669	3 112	63.5	84.8
Electric alloy steel	1000 t	694	490	530	625	551	79.4	88.2
Converter alloy steel	1000 t	519	504	402	414	357	68.7	86.2
Stainless steel	1000 t	6.5	0.8	1.1	0.5	0.5	7.8	101.6

The highest industrial production of crude steel was recorded in 2018 – 10,332 thousand tonnes. Since 2019, there has been a systematic decline in the production of crude steel, which is due to reduced orders from Poland and abroad. Moreover, another factor that resulted in a further reduction in production was the occurrence of the COVID-19 pandemic in 2020 in Poland and around the world and the related forced shutdowns in workplaces, which resulted in even smaller orders. In 2022, crude steel production was 7,521 thousand tonnes, which compared to 2018 was a decrease of 27.2%.

Chart 44. Manufactured production of crude steel



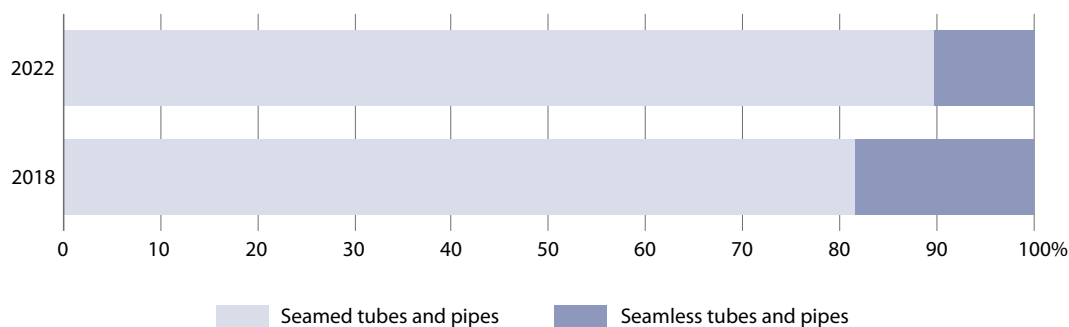
In total steel production in 2022, unalloyed electric steel had the largest share – 46.5% (compared to 2018 – an increase in share by 5.7 p.p.). Non-alloy converter steel had a slightly smaller share – 41.4% (a decrease in share by 6.0 p.p.). Alloy electric steel and converter steel accounted for 7.3% and 4.7% of total steel production, respectively. Stainless steel production in 2022 amounted to 0.5 thousand tonnes, which constituted a very small percentage of total steel production.

Table 47. Manufactured production of selected steel products

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Hot rolled products (excluding semi-finished products)	1000 t	10 106	9 280	8 490	9 240	7 713	76.3	83.5
of which:								
products of non alloy steel, not further worked than hot rolled, of a width of \geq 600 mm	1000 t	4014	3258	2792	3104	2711	67.5	87.3
Cold rolled sheets and plates	1000 t	2 343	2 188	2 002	1 839	1 370	58.5	74.5
Zinc coated sheets	1000 t	1 253	1 208	1 094	1 180	981	78.3	83.1
Steel rails	1000 t	394	316	323	322	258	65.6	80.1
Steel tubes	1000 t	794	792	806	953	1 030	129.7	108.1
Cold drawn wire of non alloy steel	1000 t	290	279	292	320	293	101.0	91.6

Among steel products, the largest group are hot-rolled products, of which 7,713 thousand tonnes were produced in 2022, and compared to the previous year it was a decrease by 16.5%, and compared to 2018 – by 23.7%. The greatest impact on the observed reduction in production had hot-rolled flat products made of non-alloy steel (share of 37.1%), for which a decrease in production was recorded by 12.7% compared to the previous year, and compared to 2018 – a decrease by 32.5%.

Another group of steel products are cold-rolled sheets, 1,370 thousand tonnes of which were produced in 2022, and compared to 2018 it was a decrease by 41.5%. A systematic decline in production was also observed in the production of zinc-coated sheets, with the exception of 2021, when an increase of 7.9% was recorded. In 2022, 981 thousand tonnes were produced of these sheets and compared to the previous year it was a decrease by 16.9%, and compared to 2018 – by 21.7%. The production of railway rails depends mainly on investments related to the modernization of railway lines in Poland. In the analysed period, the highest production was recorded in 2018 – 394 thousand tonnes, and in the following years a systematic decline in production was observed – to 258 thousand tonnes in 2022, which compared to the previous year resulted in a decrease of 19.9%, and compared to 2018 – by 34.4%.

Chart 45. Structure of manufactured production of steel tubes and pipes

The production of steel tubes in 2022 reached 1,030 thousand tonnes, which compared to the previous year was an increase by 8.1%, and compared to 2018 – by 29.7%. In Poland, mainly seamed steel tubes are produced – 89.8% share in the total production of steel tubes (an increase in share by 8.1 p.p. compared to 2018).

Table 48. Manufactured production of selected non-ferrous metals

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Silver, unwrought or in powder form	tonnes	1 189	1 400	1 323	1 332	1 298	109.2	97.4
Unalloyed aluminium	tonnes	11 320	13 496	17 343	15 566	23 265	205.5	149.5
Refined unwrought lead	tonnes	64 514	60 840	64 904	74 160	70 653	109.5	95.3
Unwrought non-alloy zinc, technically pure	tonnes	97 967	108 127	101 930	101 435	96 320	98.3	95.0
Unwrought zinc alloys, technically pure, from electrolysis	tonnes	41 034	37 363	38 429	47 071	44 197	107.7	93.9
Unwrought, unalloyed refined copper	tonnes	520 004	582 198	562 006	579 249	587 909	113.1	101.6

Among non-ferrous metals, the production of refined copper dominated. During the analysed period, a systematic increase in production was observed, except for 2020, when a decrease by 3.5% was recorded. In 2022, the production of refined copper was 588 thousand tonnes and compared to 2018 increased by 13.1%.

Among other non-ferrous metals, the highest production was recorded for technically pure unalloyed zinc. In 2019, there was an increase in production by 10.4%, but in the subsequent years of the analysed period, a decrease in production was observed. In 2022, 96 thousand tonnes were produced of technically pure unalloyed zinc and compared to 2018 it was a decrease by 1.7%. Another non-ferrous metal with significant production was refined, unwrought lead – 71 thousand tonnes were produced in 2022 and compared to 2018, there was an increase of 9.5%. In 2022 there were produced 44 thousand tonnes of technically pure electrolytic zinc alloy (an increase of 7.7% compared to 2018).

Table 49. Manufactured production of selected non-ferrous metal products

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Aluminium wire	tonnes	1 174	1 347	1 529	1 632	1 374	117.0	84.2
Copper and copper alloy bars, rods, profiles and hollow profiles	tonnes	25 609	23 389	23 110	28 149	23 471	91.7	83.4
Copper wire	tonnes	310 599	308 762	296 970	321 824	320 127	103.1	99.5

Just as copper dominates in the group of selected non-ferrous metals, copper products dominate in the group of metal products. In 2022, 320 thousand tonnes were produced of copper wire and its alloys and compared to 2018 it was an increase by 3.1%. The production of flat bars, rods, shapes and wire rods made of copper and its alloys amounted to 23.5 thousand tonnes and compared to 2018, there was a decrease of 8.3%. For comparison, the production of aluminum wire and its alloys in 2022 was 1.4 thousand tonnes and compared to 2018, there was an increase of 17.0%.

In the division Fabricated metal products, except machinery and equipment, 359 products and product groups were observed, and in 2022 was shown data on production for 299 aggregates.

In the group of metal building elements, the largest share in the production was made of metal structures and their elements, the production of which in 2022 amounted to 3,299,288 tonnes and in comparison to the previous year it was an increase by 3.5%, and compared to 2018 – by 8.1%. The second subgroup, which was significant in terms of production quantity, are doors, windows and their frames, as well

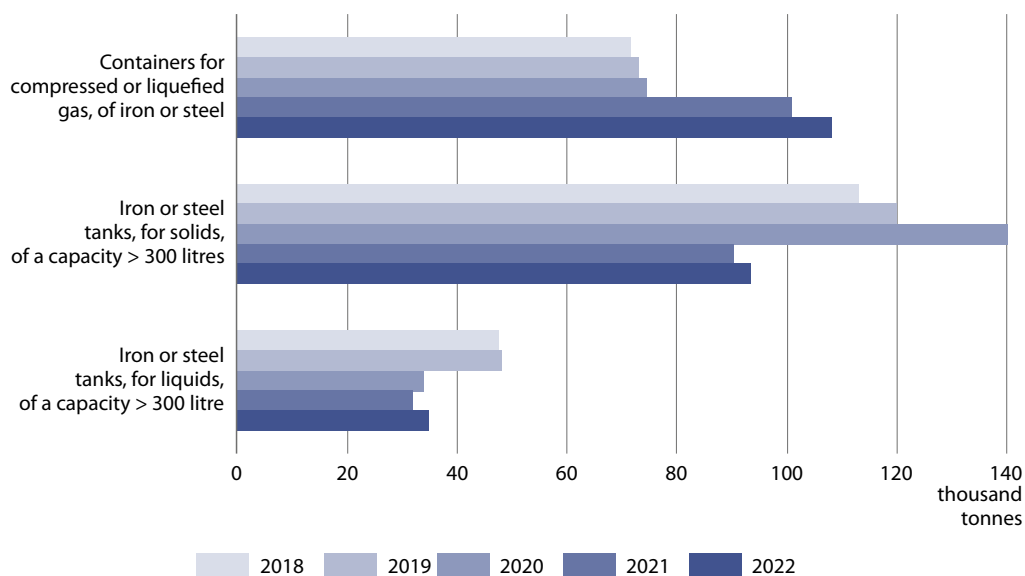
as door thresholds made of cast iron or steel – 76,320 tonnes in 2022 (a decrease by 10.5% compared to the previous year and compared to 2018 – by 3.5%). The production of steel doors alone in 2022 amounted to 657,658 units and compared to 2018 it increased by 21.6%. In third place in the group of metal structural elements was the production of doors, windows and their frames, as well as aluminum door thresholds (57,330 tonnes – an increase by 8.1% compared to the previous year, and compared to 2018 – by 20.2%). In this group of products, aluminum windows had the advantage, the production of which in 2022 amounted to 227,009 units and compared to 2018 it was a decrease by 10.6%.

Table 50. Manufactured production of metal windows and doors

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Steel doors	unit	540 676	758 463	741 242	694 666	657 658	121.6	94.7
Steel windows	unit	25 341	20 766	21 581	16 463	17 052	67.3	103.6
Aluminium doors	unit	168 657	179 021	179 104	183 937	213 073	126.3	115.8
Aluminium windows	unit	253 986	218 580	239 203	237 522	227 009	89.4	95.6

In the group of tanks and metal containers with a capacity of over 300 liters, the highest manufactured production in 2022 was recorded for metal containers for compressed or liquefied gas, which amounted to 108,194 tonnes and compared to the previous year increased by 7.2%, and compared to 2018 – by 51.6%. The second significant group are iron or steel tanks for solids, with a capacity exceeding 300 liters, which the production in 2022 was 93,528 tonnes. The production of these tanks increased systematically until 2020, and in 2021 there was a significant decrease in production – by 35.3% compared to the previous year, and although in 2022 there was an increase by 3.6% but in comparison to 2018 production decreased by 16.9%. The third group of tanks in terms of size is the production of iron or steel tanks for liquid with a capacity exceeding 300 liters. Although in 2022 was observed an increase by 8.9% in comparison to the previous year, (it was produced 34,849 tonnes) but compared to 2018 there was noted a decrease by 26.7%.

Chart 46. Manufactured production of tanks, reservoirs and containers of metal



In the analysed period, the production of central heating boilers initially decreased. In 2019 and 2020, there was noted decrease of production – respectively by 15.2% and 4.3% in comparison to the previous year. In 2021 compared to 2020 production increased significantly – by 76.9%, and in 2022 was observed a further increase of 34.6% in comparison to the previous year, which, over the five analysed years, resulted in an increase by 93.3%

In the years 2018–2022, high variability of production was observed for radiators for central heating. In 2019, there was an increase in production compared to the previous year – by 4.7%, while in 2020 there was a decrease in production – by 10.6% compared to 2019. In 2021, there was another increase in production by 10.0% in comparison to the previous year. In 2022, the production volume of radiators for central heating significantly decreased and amounted to 95 thousand tonnes. Compared to 2021, there was a decrease by 30.1% and compared to 2018 production decreased by 28.0%.

Table 51. Manufactured production of metal goods for central heatings

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Radiators for central heating, of iron or steel	tonnes	131 988	138 232	123 521	135 878	95 012	72.0	69.9
Central heating boilers	unit	475 517	403 300	385 968	682 518	919 109	193.3	134.6

In the group of cutlery, table flatware, tools and general-purpose metal products, significant production was observed for padlocks and locks, locking fittings, keys and hinges made of base metals. During the analysed period there was observed high variability in the production of these products. In 2019 and 2020, there was a decrease in production respectively by 8.3% and by 3.4%. In 2021, production increased by 15.2% and in 2022 production decreased again by 9.1% to 105 thousand tonnes. Compared to 2018, the production of these products decreased by 7.2%. Another significant production was observed for hand tools, of which in 2022 were produced 28 thousand tonnes and whose production has increased by 25.5% over the last five years.

Table 52. Manufactured production of selected fabricated metal products

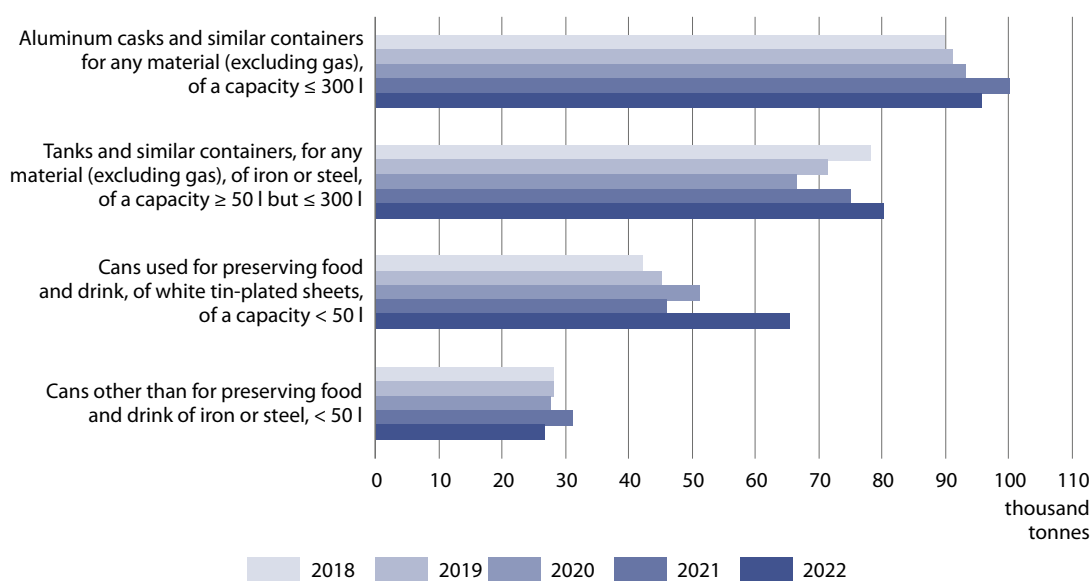
Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Table flatware including knives	kg	89 071	107 826	213 072	108 140	117 984	132.5	109.1
Padlocks and locks, closing fittings, keys and hinges of base metal	tonnes	113 215	103 874	100 307	115 592	105 119	92.8	90.9
Hand tools	tonnes	22 112	23 201	24 858	32 860	27 758	125.5	84.5
Household article of iron, steel, cooper and aluminium	tonnes	23 009	23 137	24 181	28 791	26 021	113.1	90.4

In the group of metal packagings with a capacity not exceeding 300 liters, the highest production was recorded for aluminum casks and similar containers for any material (excluding gas), which in 2022 reached 96 thousand tonnes, and compared to 2018 was recorded an increase by 6.4%. Large production was also recorded for iron or steel tanks and similar containers for any material (excluding gas), with a capacity exceeding 50 liters but not exceeding 300 liters – 80 thousand tonnes.

Table 53. Manufactured production of selected metal packagings of a capacity ≤ 300 l

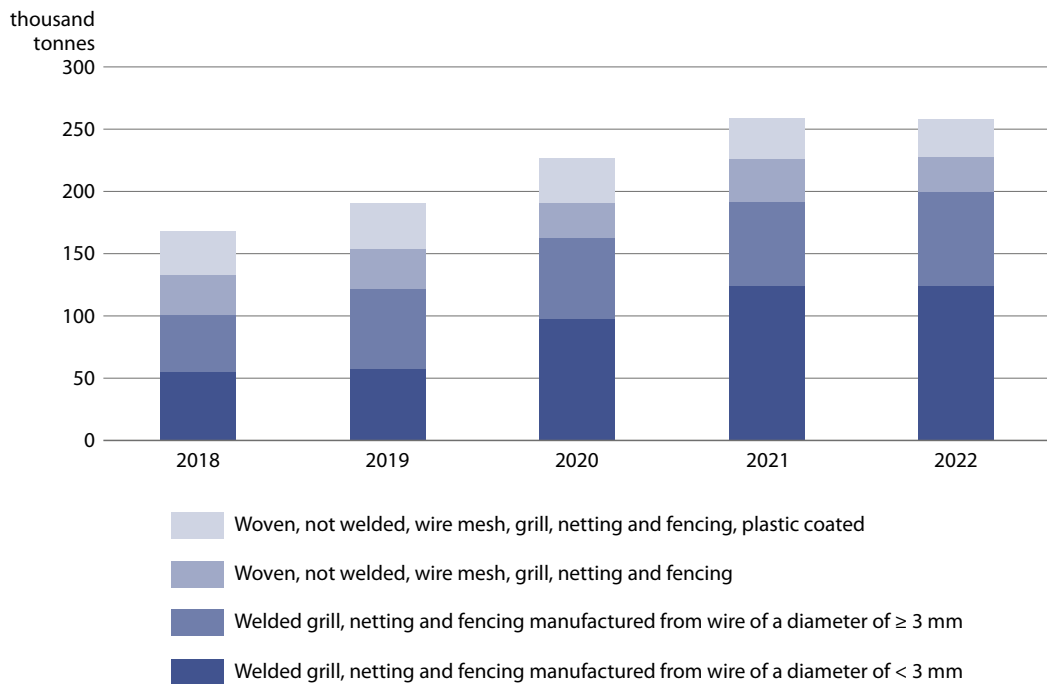
Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Tanks, casks and similar containers, for any material (excluding gas), of iron or steel, of a capacity ≥ 50 l but ≤ 300 l	tonnes	78 295	71 292	66 565	75 020	80 208	102.4	106.9
Tanks, casks and similar containers, for any material (excluding gas), of iron or steel, of a capacity < 50 l	tonnes	18 303	20 281	22 621	25 668	19 697	107.6	76.7
Cans used for preserving food and drink of iron or steel, < 50 l, food cans	tonnes	42 143	45 122	51 101	46 145	65 323	155.0	141.6
Cans used for preserving food and drink of iron or steel, < 50 l, drinks	tonnes	13 233	13 536	15 399	16 697	13 927	105.2	83.4
Cans other than for preserving food and drink of iron or steel, < 50 l	tonnes	28 048	28 078	27 702	31 134	26 670	95.1	85.7
Aluminium casks and similar containers, for any material (excluding gas), of a capacity ≤ 300 l	tonnes	89 945	91 016	93 228	100 100	95 685	106.4	95.6

Production of iron or steel food cans for preserving food and drink, despite a decline in 2021 by 9.7% in comparison to the previous year, increased systematically in the analysed period and in 2022 compared to 2018 was higher by 55.0%. Production of iron or steel cans other than for preserving food and drink, with a capacity not exceeding 50 liters in 2018–2020 was at a similar level (28 thousand tonnes). In 2021, there was a significant increase in production compared to the previous year – by 12.4%, but in 2022 production decreased by 14.3% compared to the previous year and compared to 2018 there was a decrease by 4.9%.

Chart 47. Manufactured production of selected metal packagings

In the group of other finished metal products, in the analysed period there was noted a systematic increase in the production of wire products, chains and springs, with the exception of 2022, when production decreased by 2.6% compared to the previous year and amounted to 669,197 tonnes. In comparison to 2018, this production increased by 11.1%. The main part of this group of products are wire products such as grates, nets, fences and wire screens; nails and similar articles; strands, cables, plaited bands and similar articles of metal, not electrically insulated; wires, rods, tubes, plates, electrodes covered with or with a flux core; barbed wire etc.

Chart 48. Manufactured production of selected metal goods like welded grill, netting and fencing



In the analysed period, the highest production among wire products was recorded for welded grill, netting, fencing and expanded metal. In 2022 were produced 265,831 tonnes of welded grill, netting, fencing and expanded metal and compared to 2018, there was an increase in production by 56.6%. The second group in terms of production volume in the group of wire products are nails and similar metal articles, for which were observed changes in production. In 2019, there was a decrease in production by 9.4% compared to the previous year, while in 2020 and 2021 – respectively an increase by 7.1% and by 8.1%, compared to the previous year. In 2022 were produced 123,686 tonnes of nails and similar metal articles and compared to the previous year, there was a decrease by 5.7% and compared to 2018 – a decrease in production by 1.1%. Production of stranded wire, cables, plaited bands and similar products made of metal, not electrically insulated, initially decreased in the analysed period – in 2019 and 2020 a decrease respectively by 11.6% and by 10.0% compared to the previous year. In 2021 and 2022, there was an increase in production – respectively by 10.2% and by 3.0%, compared to the previous year, however, in 2022 there was a decrease in production by 9.7% in comparison to 2018.

In the group of other finished metal products, we can also find springs, chains, fasteners, i.e. various types of screws, rivets, screws, nuts, washers, sanitary ware, household, table and kitchen products, cash register safes and similar products, armored and reinforced, signs, name, address and similar boards, numbers, letters and other symbols, non-mechanical vents, gutters, hooks and similar articles used in the construction industry, etc.

Among these products, the largest group are threaded fasteners of iron or steel, which in 2022 were produced 199 thousand tonnes, which was an increase by 23.9% compared to 2018. The production of metal springs, leaf springs and leaf springs in 2022 was 104 thousand tonnes and compared to 2018 it was by 4.3% higher. During the analysed period, the production of stainless steel sinks and washbasins systematically decreased, with the exception of 2021, when there was an increase in production by 20.8% compared to the previous year, however, compared to 2018, there was a decrease in production by 35.9%.

Table 54. Manufactured production of other metal products

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Springs and leaves for springs, of iron or steel; copper springs	tonnes	99 408	94 662	94 236	109 492	103 668	104.3	94.7
Chain (except articulated link chain) and parts thereof	tonnes	13 913	12 874	9 502	9 330	10 946	78.7	117.3
Threaded fasteners, of iron or steel, n.e.c.	tonnes	160 990	188 120	191 912	210 757	199 392	123.9	94.6
Non-threaded fasteners, of iron or steel, n.e.c.	tonnes	23 616	22 636	19 564	20 275	20 975	88.8	103.5
Stainless steel sinks and wash basins	unit	345 310	313 174	251 770	304 044	221 207	64.1	72.8
Table, kitchen or household articles and parts thereof, of iron, steel, copper or aluminium	tonnes	23 009	23 137	24 181	28 791	26 021	113.1	90.4
Armoured or reinforced safes, strong-boxes and doors and safe deposit lockers for strong-rooms, cash or deed boxes and the like, of base metal	tonnes	27 687	33 121	24 050	25 283	34 597	125.0	136.8
Iron or steel non-mechanical ventilators, guttering, hooks and similar articles used in the building industry	tonnes	20 909	21 726	22 711	24 810	19 581	93.6	78.9
Base metal sign-plates, name-plates, address-plates and similar plates, numbers, letters and other symbols (excluding illuminated)	tonnes	5 431	4 812	2 116	2 854	2 315	42.6	81.1

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 2022, 236 products from this industry were surveyed, and manufactured production was reported for 177 products. The most significant part of them are products classified as consumer electronic equipment, accounting for 56.0% of the production value of the products in question in 2022.

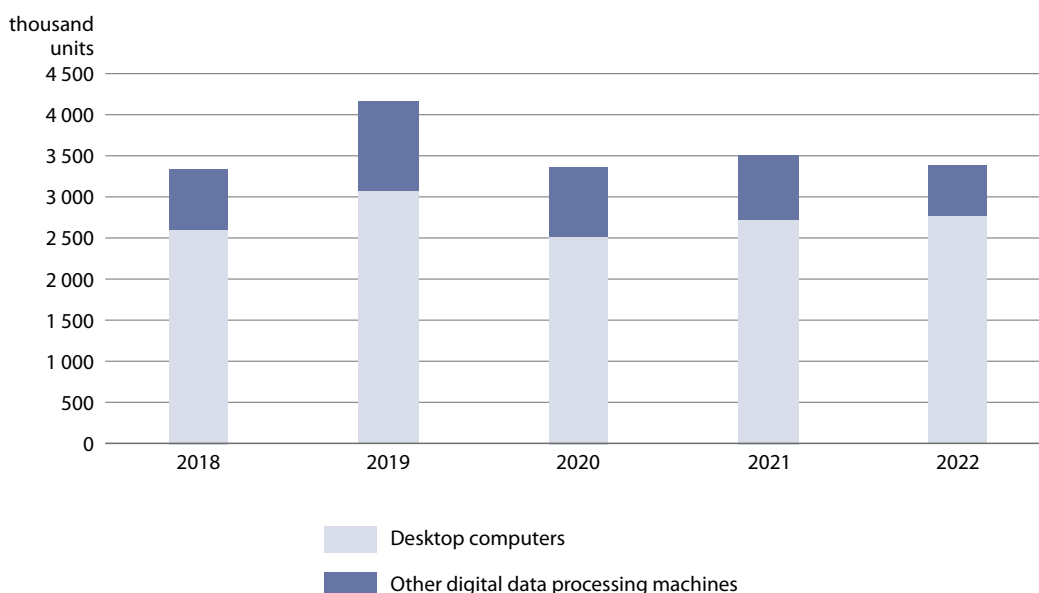
In the analysed period, the production of television sets remained at a high level, with alternating periods of growth and decline observed in subsequent years. In 2019, there was an increase by 12.3%, the following year there was a slight decrease – by 1.5%, in 2021 – a significant increase by 15.7%, and in 2022 production decreased again, however, in relation to 2018 it still remained 13.7% higher. In the production of radio receivers, the increase continued until 2021 (largest in 2020, by 69.7% compared to 2019). In 2022 there was a significant decline compared to the previous year (by 35.1%); however, production was higher by 79.4% than in the first year of the period in question. Loudspeakers are an example of components for the production of consumer electronics. Their production in Poland increased in 2019 by 12.3%, in 2020 there was a clear decline – by 17.4%. In the following years, production increased and in 2022 it exceeded the level of 2018 by 9.1%.

Table 55. Manufactured production of television receivers, radio receivers and loudspeakers, not mounted in enclosures

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
TV receivers including monitors	1000 units	15 103	16 963	16 707	19 326	17 173	113.7	88.9
Radio receivers	1000 units	2 243	2 528	4 290	6 206	4 025	179.4	64.9
Loudspeakers, not mounted in enclosures	1000 units	17 146	19 250	15 896	18 291	18 706	109.1	102.3

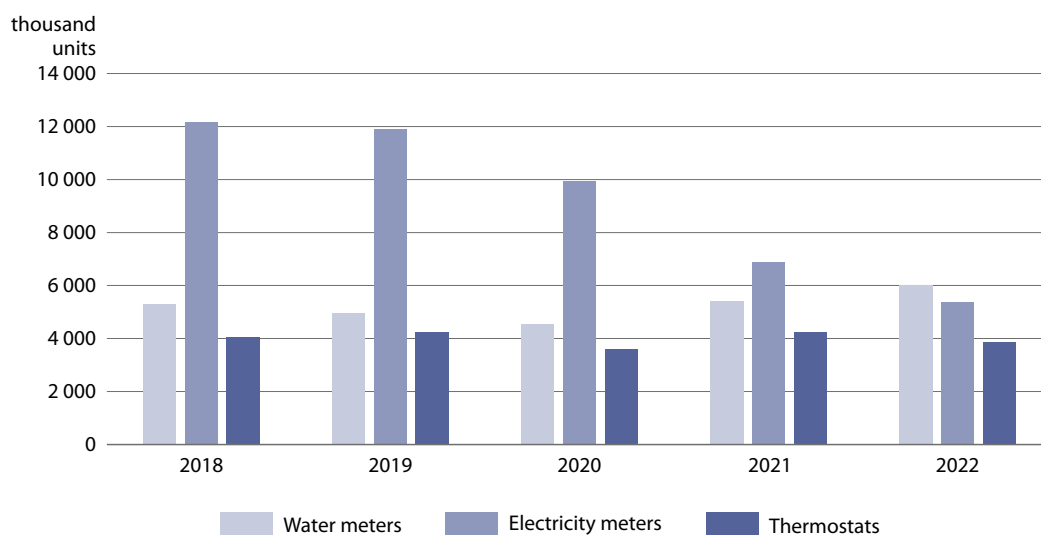
Another important group of products is digital data processing machines. Their manufactured production increased in 2019 by 24.9% compared to 2018. In 2020, production approached the level of 2018, recording a decrease of 19.2%. The main reason for the decrease was the COVID-19 pandemic and the associated difficulties in component supply and reduced orders. In the following years, changes in production were relatively minor and in 2022 production was at a level similar as in the beginning of the period in question, recording a slight increase of 1.1% compared to 2018. Desktop computers accounted for the largest share of this product group, with production increasing by 6.2% in the analysed period.

Chart 49. 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 and thermostats, among others. The production of water meters decreased until 2020 – by 6,7% in 2019 and by 8,2% in 2020. The following years saw increases and as a result, the production in 2022 reached the level of approximately 6 million units – higher than in 2018 by 13.3%. Production of electricity meters declined steadily throughout the period in question, from around 12.2 million units in 2018 to around 5.4 million units in 2022 (down by 55.8%). The production of thermostats changed little between 2018 and 2022 (decreased by 4.2%), with the largest decrease occurring in 2020 (by 15.3% compared to 2019), the first year of pandemic-related restrictions. However, in the following year production returned to the pre-pandemic level – increased by 18.0% in 2021; and in 2022 a decline was recorded of 8.5%.

Chart 50. Manufactured production of water meters, electricity meters and thermostats



2.10. Machinery and equipment

This subchapter includes products classified according to the Polish Classification of Goods and Services (PKWiU) as electrical equipment and household appliances as well as machinery and equipment n.e.c.

The division that covers electrical equipment and household appliances includes, among others, electric motors, generators, transformers, electricity distribution and control apparatus, batteries and accumulators, insulated wires and conductors, as well as installation equipment, electric lighting equipment and household appliances. In this annual examination, conducted for 2022, 292 products were statistically observed, and the manufactured production was reported for 251 products.

In the period that was under review, the production of electric motors and generators (excluding traction motors) increased to 2019, while in 2020 it recorded a decline, followed by a rebound in production and in 2022 it reached level of 48,086 thousand units, which translated into an increase, that was compared both to 2018 and 2021, respectively by 15.7% and 13.3%. An increase in production compared to 2018 and 2021, respectively, was recorded in the production of insulated wires and conductors (by 10.9% and 1.9%), including: optical fibre cables (by 12.9% and 4.6%) and power cables (by 23.2% and 13.5%). In 2022, production of insulated wires and conductors reached 451 thousand tonnes, of which 56.8% was production of other electric conductors, for a voltage not exceeding 1 000 V, not fitted with connectors, share of which decreased by 9.1 p.p. compared to 2018. In the analysed period, both in relation to 2018 and 2021, respectively, a decrease in production was recorded by primary cells and primary batteries (by 12.8% and 16.4%), lead-acid accumulators used for starting piston engines for motor vehicles

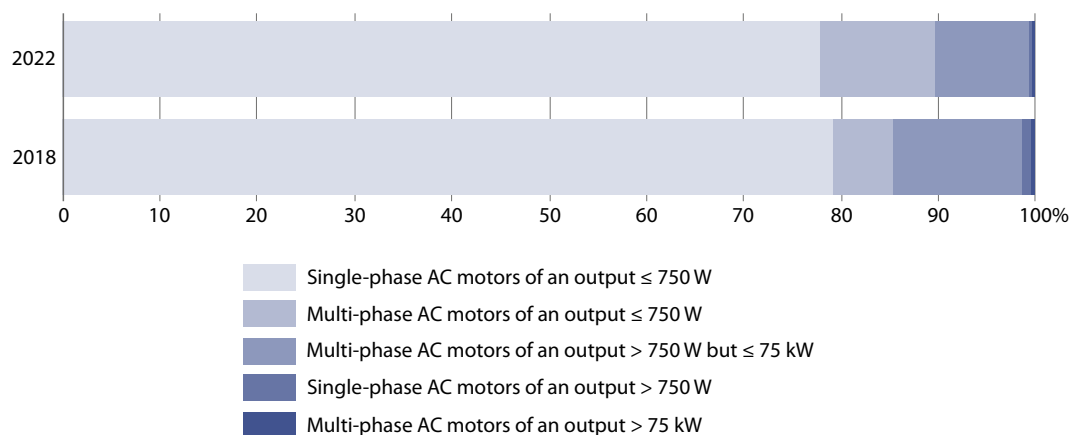
(by 11.0% and 22.7%) and electric conductors used for telecommunications (by 27.3% and 8.5%). The largest increase in production in the under reviewed period – 83.3% – was recorded for nickel-cadmium, nickel metal hydride, lithium-ion, lithium polymer, nickel-iron and other electric accumulators where the largest share of production had lithium-ion batteries.

Table 56. Manufactured production of selected electrical equipment

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Electric motors and generators (excl. traction motors)	MW	14 867	18 914	13 399	12 194	17 223	115.8	141.2
	1000 units	41 566	43 385	31 973	42 442	48 086	115.7	113.3
Primary cells and primary batteries	1000 units	996 947	972 804	987 345	1 039 887	868 932	87.2	83.6
Lead-acid accumulators used for starting piston engines for motor vehicles	1000 units	6 538	6 168	6 410	7 531	5 819	89.0	77.3
Nickel-cadmium, nickel metal hydride, lithiumion, lithium polymer, nickel-iron and other electric accumulators	1000 units	11 478	12 101	22 531	24 840	21 038	183.3	84.7
Insulated wires and conductors	tonnes	406 553	469 620	423 968	442 792	451 012	110.9	101.9
optical fibre cables	tonnes	16 374	20 726	18 248	17 669	18 490	112.9	104.6
electric conductors used for telecommunications	tonnes	18 168	15 122	12 375	14 438	13 214	72.7	91.5
power cables	tonnes	61 734	65 346	63 958	67 010	76 040	123.2	113.5

In the analysed period, there was a decrease in the share of single-phase AC motors by 2.0 p.p. in favour of multi-phase AC motors, among which only multi-phase AC motors, with an output not exceeding 750 W, recorded an increase in share by 5.8 p.p.

Chart 51. Structure of manufactured production of AC motors



The production volume of manufactured household appliances fluctuated over the analysed period, which was influenced by both the COVID-19 pandemic and the situation in Ukraine. In 2022, compared to 2018, there was an increase in the production of, among others dishwashing machines (by 26.3%), domestic electric coffee or tea makers (by 18.9%), refrigerators and freezers, including combined refrigerators-freezers (by 8.9%), drying machines (by 3.1%), and domestic electric ovens for building-in (by 1.3%). Whereas, a decrease was recorded for other products, the largest in the case of domestic food grinders, mixers and fruit or vegetable juice extractors, with a self-contained electric motor – 71.3%. However, in 2022, which was compared to 2021, the increase in production occurred just for domestic electric coffee or tea makers (by 5.3%), and for selected household appliances, the largest decrease – by 67.7% – was recorded for domestic food grinders, mixers and fruit or vegetable juice extractors.

Table 57. Manufactured production of selected household appliances

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Refrigerators and freezers, including combined refrigerators-freezers	1000 units	3 220	3 462	3 519	3 943	3 508	108.9	89.0
Dishwashing machines	1000 units	4 418	4 704	4 944	5 886	5 581	126.3	94.8
Automatic washing machines (including machines which both wash and dry)	1000 units	6 704	6 555	6 773	7 013	6 329	94.4	90.2
Drying machines	1000 units	2 946	3 083	3 240	3 898	3 038	103.1	77.9
Domestic electric cookers with an oven (including combined gas-electric appliances)	1000 units	1 352	1 392	1 411	1 603	1 076	79.6	67.1
Domestic electric hobs for building-in	1000 units	314	340	376	374	289	92.1	77.4
Domestic electric ovens for building-in	1000 units	2 776	3 132	3 066	3 787	2 812	101.3	74.3
Gas cookers with an oven	1000 units	340	314	264	302	125	36.7	41.3
Vacuum cleaners	1000 units	989	949	1 024	1 282	831	84.0	64.8
Domestic food grinders, mixers and fruit or vegetable juice extractors, with a self-contained electric motor	1000 units	1 711	1 389	1 282	1 520	491	28.7	32.3
Domestic electric coffee or tea makers	1000 units	2 054	2 703	2 837	2 319	2 443	118.9	105.3

The second area of production discussed in this subchapter is the production of machines and equipment, 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 2022, 649 products from this industry were surveyed, and manufactured production was reported for 487 products. The largest share in value is of general-purpose machinery, which accounted for 65.8% of production value of the products in question in 2022.

Ball or roller bearings are a typical product included in general-purpose machinery. In the years 2018–2022, the production of bearings measured in units declined – the decrease was 19.0%. Production decreased in 2019 and 2020, in 2021 there was a significant rise (by 24.6%), in 2022 there was a decrease again, by 5.7%. Another product classified as general-purpose machinery is fire extinguishers. The production of fire extinguishers in 2018-2020 period was subject to relatively minor changes, in 2021 a significant increase occurred (by 19.0%) and in 2022 production decreased, to a level 4% higher than in 2018. Cash registers

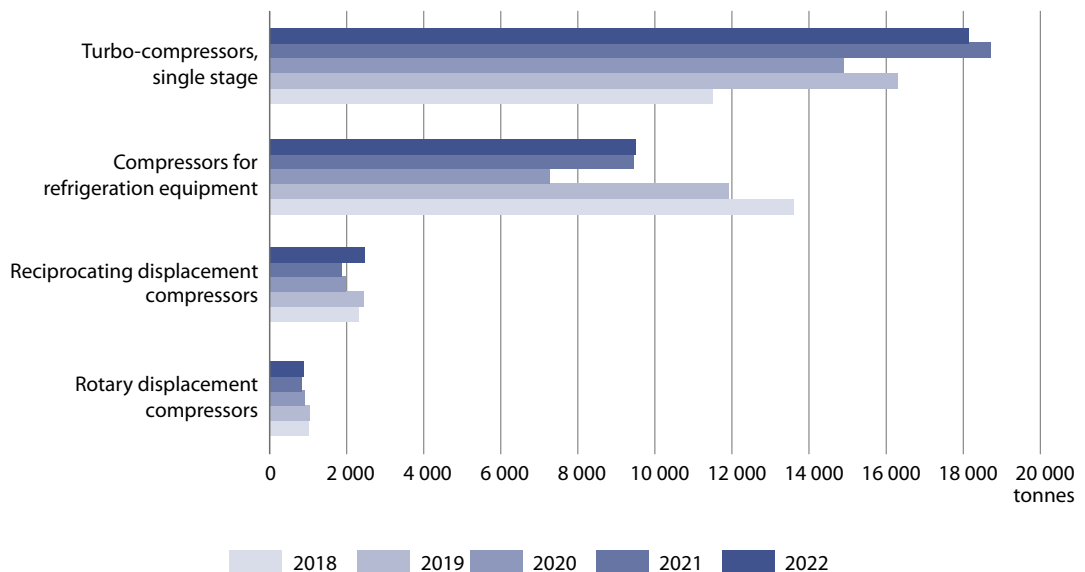
are also considered general-purpose machines. The level of their production is related to the changes in legal regulations regarding the use of fiscal cash registers. Large increases occurred in 2019 (by 48.0%) and in 2021 (by 22.7%). In 2022, production dropped significantly (by 49.4%), to a level 13.3% lower than at the beginning of the period in question. The production of mixing valves used in building plumbing showed a downward trend until the year 2020. In 2021 a significant increase occurred (by 31.7%), but in 2022 production dropped again, to a level lower than at the beginning of the period in question by 12.0%.

Table 58. Manufactured production of selected items of general-purpose machinery

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Ball or roller bearings	1000 units	246 159	203 573	169 687	211 479	199 511	81.0	94.3
Fire extinguishers	1000 units	5 589	5 719	5 513	6 559	5 809	104.0	88.6
Cash registers	unit	196 623	291 032	274 316	336 696	170 502	86.7	50.6
Mixing valves	1000 units	1 424	1 271	1 220	1 607	1 253	88.0	78.0

General-purpose machinery also include various types of compressors. The production of single stage turbo-compressors measured in tons (most of them are used to turbocharge combustion engines) increased significantly (by 57.6%) in the years 2018–2022. After a large increase in 2019 (by 41.6%), there was a decline in 2020, and in the following year production increased again. In 2022, there was a slight reduction in production. The production of compressors for refrigeration equipment decreased significantly in the period in question. After certain decline in production in 2019, a quite deep drop occurred in the first year of the pandemic (2020 – by 39.1%), caused by reduced orders for compressors used in car air conditioning installations. Then, in 2021 a significant increase was observed which, however, did not continue in 2022 and at the end of the period in question, production was 30.1% lower than in 2018. Piston compressors (reciprocating displacement compressors) manufactured in Poland are mostly small compressors used in car repair kits, their production in the years 2018-2022 increased modestly (by 7.7%). The reduction in production related to the pandemic lasted about 2 years, the lowest production was recorded in 2021, while in 2022 there was a significant increase – by 31.1%. The last type of compressors discussed are rotary displacement compressors, typically used in industrial installations of compressed air. Their production was subject to relatively minor changes during the period in question, the largest decline occurred in 2020 (by 12.7%); in 2022 production was lower than in 2018 by 12.3%.

Chart 52. Manufactured production of various kinds of compressors



General-purpose machines also include cooling and ventilation equipment. These include, among others, heat exchangers. The level of production of heat exchanger units for chemical industry in 2022 was slightly higher than in 2018, however it was subject to significant changes during this period. After a sharp drop in 2019, there was a strong recovery (rise by 38.4%) in 2020 and a further slight increase in 2021 (by 5.1%). In 2022 production decreased by 7.5%, to a level by 1.7% higher than in 2018. The production of air conditioning machines of a kind used in motor vehicles decreased in 2019, in 2020 there was a slight increase, and in 2021 – a more significant increase (by 32.3%). However, in 2022 a considerable reduction in production was observed (to a level 5.1% lower than at the beginning of the period in question). The production of refrigerated show-cases and counters is surveyed separately in two types of equipment: for storing frozen food and other refrigerated show-cases and counters. The production of both types increased in 2018–2022 period, but the production of show-cases and counters for frozen food increased much more during this period (by 51.8%) than the production of other show-cases and counters (an increase of 18.5%). The production of show-cases and counters for frozen food storage, after a significant increase in 2019 (by 27.4%), decreased in 2020, followed by an increase in the following two years. The production of other show-cases and counters in 2018–2020 was subject to only slight fluctuations, in 2021 it increased significantly (by 30.8%), and in 2022 a decrease of 8.2% was observed.

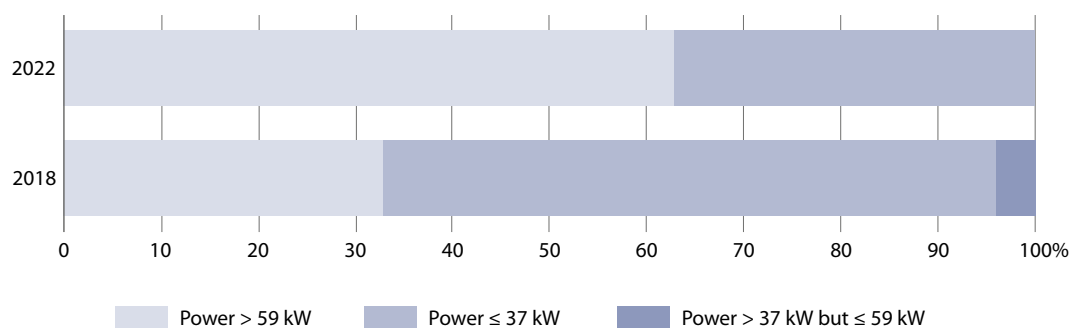
Table 59. Manufactured production of heat exchange units for chemical industry, air conditioning machines used in vehicles and refrigerated show-cases and counters

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Heat exchange units for chemical industry	tonnes	2 762	2 089	2 891	3 038	2 809	101.7	92.5
Air conditioning machines of a kind used in motor vehicles	unit	120 730	105 925	109 290	144 657	114 556	94.9	79.2
Refrigerated show-cases and counters for frozen food storage	unit	8 265	10 528	9 591	11 503	12 546	151.8	109.1
Refrigerated show-cases and counters (excluding for frozen food storage)	unit	52 802	52 841	52 129	68 180	62 582	118.5	91.8

Machinery for agriculture and forestry accounted for 13.3% of the sold value in 2022 of machinery and equipment discussed here.

Between 2018 and 2022, the number of agricultural tractors produced increased (by 50.1%) to 3,219 units. By 2022, the production of tractors with medium engine power had disappeared. The production of large horsepower tractors increased very significantly, while the production of small horsepower tractors decreased – in 2018, small horsepower tractors accounted for 63.1% of production, while in 2022, the same percentage represented the production of large horsepower tractors.

Chart 53. Structure of manufactured production of agricultural tractors



The production of many types of soil tillage and harvesting machinery decreased in 2022 compared to the previous year. The production of scarifiers and cultivators changed relatively little between 2018 and 2020. In 2021, there was a clear increase (by 22.5%), but in 2022, production decreased to a level similar to that recorded in 2018 (in 2022 it was 2.6% higher than in 2018). Disc harrow production, after decline in 2019, increased for the following two years (by 37.7% in 2021), but declined again in 2022 – however was higher than in 2018 by 28.0%. The production of field seeders also declined in 2019, followed by increase in 2020 and 2021, and then a drop of 23.9% occurred in 2022, which left production at the end of the period in question 10.7% lower than at the beginning. The production of potato planters increased very significantly in 2020 (by 80.4%), rose further the following year, and declined by 24.0% in 2022, but was 57.1% higher than in 2018, as a result of the earlier increase.

Table 60. Manufactured production of selected soil machinery

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Scarifiers and cultivators	unit	10 635	10 028	10 221	12 520	10 909	102.6	87.1
Disc harrows	unit	5 143	4 578	5 130	7 062	6 584	128.0	93.2
Field seeders	unit	5 459	4 611	5 698	6 406	4 875	89.3	76.1
Potato planters	unit	1 976	1 989	3 588	4 084	3 105	157.1	76.0

The production of mowers carried by a tractor increased significantly (by 23.9%) in 2019, further increased slightly in 2020, but declined in 2021 returning to a level similar to 2018. In 2022, it declined even more and in the last year of the period in question was 5.4% lower than in 2018. The production of potato diggers increased until 2020 (in 2020 by 45.8% compared to 2019), there was a slight decrease in production in 2021 and a drop of 16.5% in 2022, nevertheless the production level was 30.3% higher than at the beginning of the period in question. The production of combine harvester-threshers, after a decrease in 2019, rose significantly in the following two years (in 2021 by 77.0% compared to 2020) and in 2022, despite the decline recorded, was at a level 65.1% higher than in 2018. The production of sprayers for use with agricultural tractors on field crops changed relatively little during the period in question. It declined in 2021 and 2022, making it lower 9.9% in the latter year than in 2018.

Table 61. Manufactured production of selected mowers, harvesting machinery and sprayers

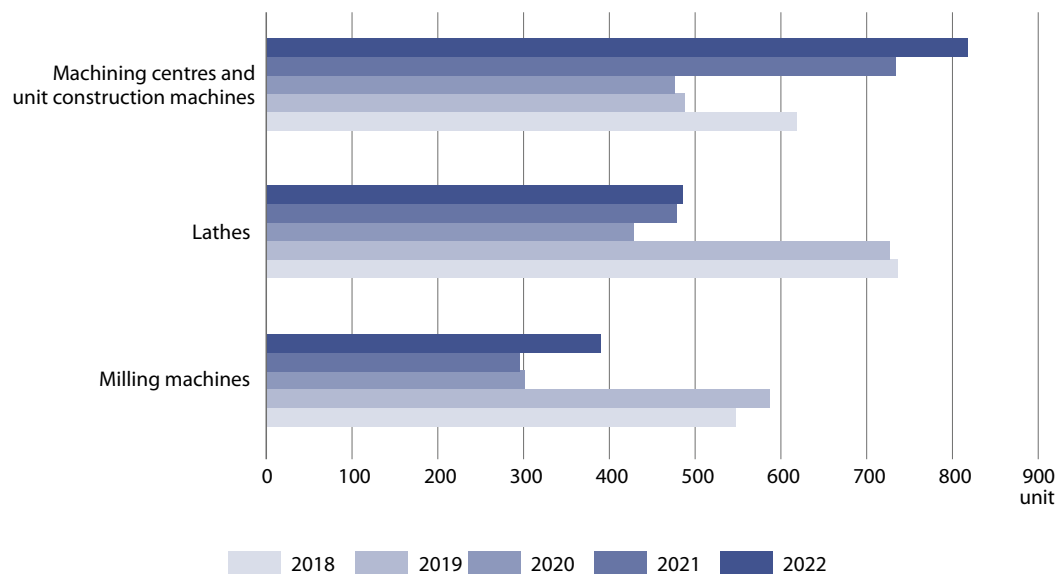
Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Mowers carried by a tractor	unit	12 161	15 072	15 298	12 157	11 509	94.6	94.7
Potato-diggers	unit	2 543	2 738	3 993	3 971	3 314	130.3	83.5
Combine harvester-threshers	unit	1 205	1 040	1 519	2 688	1 990	165.1	74.0
Sprayers for use with agricultural tractors on field crops	unit	9 563	9 058	9 684	9 231	8 620	90.1	93.4

Another group of machinery is machine tools, the production of which in 2022 accounted for 4.3% of the value of the production of machinery and equipment discussed here.

The production of machining centres and unit construction machines for working metal declined until 2020, then a significant increase in production occurred in 2021 (by 54.1%) and a further increase in 2022, with production reaching a level 32.1% higher than at the beginning of the period in question. For the production of lathes for working metal, after a slight decrease in 2019, there was a significant drop (by 41.1%) in the first year of the pandemic (2020). Production increased in the following years, but in 2022

it was at a level 33.9% lower than in 2018. The production of milling machines for metal also decreased sharply in 2020 (by 48.6%), and despite a marked increase in 2022 (by 31.8%), in the last year of the period in question was 28.8% lower than in 2018.

Chart 54. Manufactured production of selected machine tools for working metal



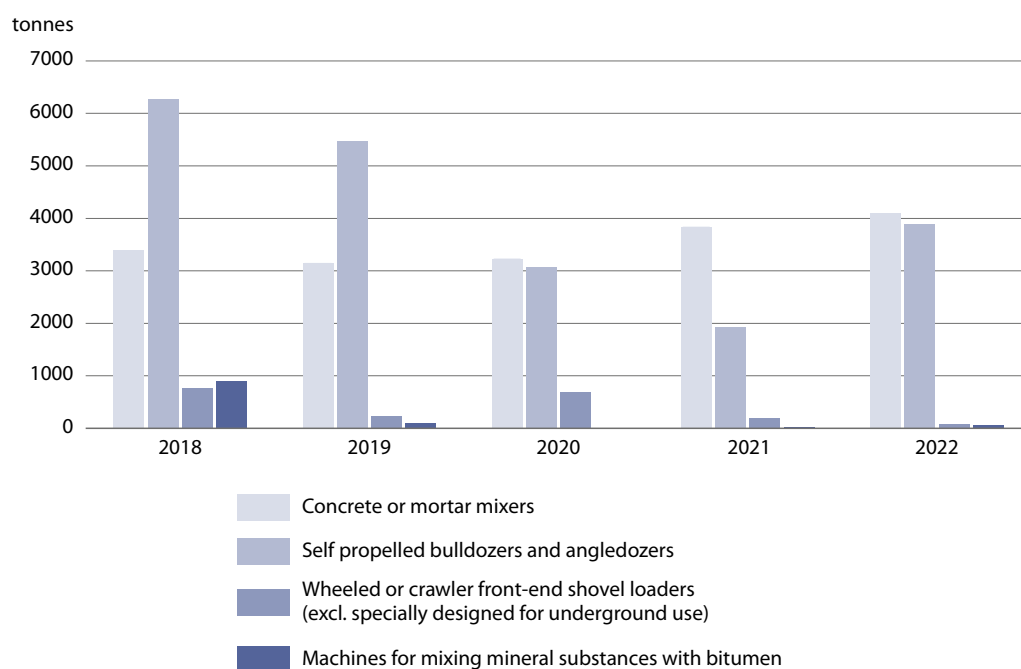
The production of other special-purpose machinery accounted in 2022 for 16.6% of the value of sold production of machinery and equipment discussed here.

Production of rolls for rolling mills was on decline until 2020 (dropped 32.9% in 2020 compared to 2019), then increased slightly in 2021 and remained at a similar level in 2022, down 39.4% compared to 2018. In the production of continuous-action elevators and conveyors for underground use, there was a clear increase in 2019 (by 37.5%), after which production declined significantly for two consecutive years. In 2022 production increased again (by 21.9%), but remained 35.3% lower than in 2018. In the production of industrial machinery for the preparation of meat, excluding poultry, after initial decline in 2019 (by 20.9%), clear upward trend followed (rise by 101.8% in 2021), and at the end of the period in question the production was 182.1% higher than in 2018. The production of machinery for the paper industry showed relatively little change until 2020, rising sharply (by 87.6%) in 2021. In 2022, production dropped by 37.0% compared to 2021, but remained at a level higher than in 2018 (by 17.8%).

Table 62. Manufactured production of selected special-purpose machinery

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Rolls for rolling mills	tonnes	3 005	2 627	1 762	1 830	1 822	60.6	99.6
Continuous-action elevators and conveyors, for underground use	tonnes	11 420	15 698	9 928	6 061	7 391	64.7	121.9
Industrial machinery for the preparation of meat, excluding poultry	tonnes	498	394	510	1 029	1 405	282.1	136.5
Machinery for paper and paper-board production	tonnes	1 678	1 727	1 674	3 140	1 977	117.8	63.0

Construction and road building machinery and equipment are also categorised as special-purpose machinery, and their production in successive years has been characterised by considerable variability. The production of concrete and mortar mixers, after declining in 2019, increased slightly in 2020 and continued to increase in the following years. As a result, production in 2022 was 20.9% higher than in the first year of the period in question. In bulldozers and angledozers production there was a steady, significant decline between 2018 and 2021. In the last year of the analysed period, production more than doubled (rose by 101.6%), but remained 38.1% lower than in 2018. The production of self-propelled front-end loaders not designed for underground use declined very significantly in 2019 (by 69.9%), with a strong increase the following year, and a repeat of significant decline in 2021. In 2022, production declined even further, to the level of 11.0% of 2018 production. The production of the last type of machinery and equipment discussed here – machinery for mixing mineral substances with bitumen, mainly used in road construction – decreased significantly during the period in question. From a level of 891 tonnes in 2018, there was a sharp decline to 101 tonnes the following year, and then to a few tonnes in 2020; then there was an increase in the following years, but in 2022 production accounted for only 7.9% of 2018 production.

Chart 55. 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 in 2022, of which production data was shown for 81. In the Production of other transportation equipment division, these figures were 130 and 72, respectively.

The downward trend in the production of passenger cars has continued for several years – compared to 2018, their production fell by 43.5%. The largest decrease – by 98.5% compared to 2018 – was recorded for cars with a spark-ignition engine with a displacement of more than 1500 cm³, while the production of diesel cars with a capacity of up to 1500 cm³ was reported only in 2018. Gasoline cars with a capacity of up to 1500 cm³ were the most produced, their production in 2022 accounted for 82.9% of passenger car production. In 2022, for the first time, there was a small production of electric cars. Motorhomes, whose popularity increased during the COVID-19 pandemic, have also been a novelty in recent years. Among them, diesel vehicles dominated by far – 94.6% of production in 2022.

Table 63. Manufactured production of passenger cars

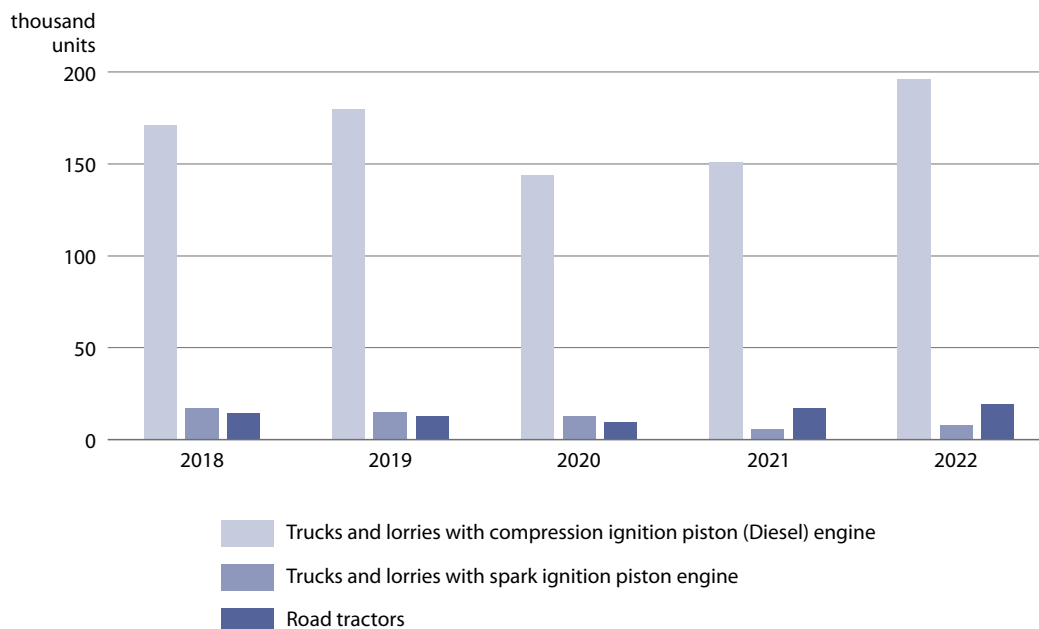
Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Passenger cars	unit	451 545	434 666	278 788	260 698	255 140	56.5	97.9
with a spark-ignition engine of cylinder capacity less than or equal to 1500 cm ³	unit	360 776	383 102	243 461	225 659	211 447	58.6	93.7
with a spark-ignition engine of cylinder capacity more than 1500 cm ³	unit	43 919	16 229	4 523	525	669	1.5	127.4
with a diesel engine of cylinder capacity less than or equal to 1500 cm ³	unit	7 725	–	–	–	–	.	.
with a diesel engine of cylinder capacity more than 1500 cm ³ but not more than 2500 cm ³	unit	55 504	55 983	48 335	34 514	43 024	77.5	124.7
with electric motor only	unit	–	–	–	–	76	.	.
Motor caravans with only spark-ignition engine of a cylinder capacity more than 1500 cm ³ , but no more than 3000 cm ³	unit	–	–	–	333	252	.	75.7
Motor caravans with only diesel engine of a cylinder capacity more than 1500 cm ³ but no more than 2500 cm ³	unit	–	–	3	4 325	4 410	.	102.0

Compared to the previous year, the production of motor vehicles for the transport of 10 or more people (buses) decreased slightly – by 3.1%. A decrease in bus production was also recorded by 15.0% compared to 2018. The decline compared to 2021 hit the most represented category of buses with a spark-ignition engine with a displacement of over 2800 cm³ – production decreased by 18.7%. A significant increase of 24.0% was recorded for the production of battery-powered electric buses. In the case of trolleybuses, both compared to 2021 and 2018, there was a nearly 40% decrease.

Table 64. Manufactured production of motor vehicles for the transport of 10 or more person (buses)

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Buses	unit	5 987	7 358	6 037	5 250	5 089	85.0	96.9
with diesel engine of cylinder capacity more than 2500 cm ³	unit	1 907	2 388	2 006	1 252	1 310	68.7	104.6
with spark-ignition engine of cylinder capacity not more than 2800 cm ³	unit	–	–	–	18	25	.	138.9
with spark-ignition engine of cylinder capacity more than 2800 cm ³	unit	3 476	4 349	2 727	3 213	2 611	75.1	81.3
hybrid powered (electric motor + internal combustion engine)	unit	301	195	717	252	514	170.8	204.0
with battery-powered electric motor	unit	107	153	457	396	491	458.9	124.0
with electric motor powered from the overhead contact line, (trolley-buses)	unit	121	261	130	119	72	59.5	60.5

The production of motor vehicles for the transport of goods, i.e. trucks and road tractors for towing semi-trailers, has been increasing for many years. After the slump in 2020 caused by the COVID-19 pandemic, the upward trend has returned, exceeding the pre-pandemic level of production. In 2022, this production amounted to 223.7 thousand units, that is an increase of 29.0% compared to 2021 and 10.7% compared to 2018. These trends were influenced by changes in the production of diesel trucks, which are the dominant category in this grouping (83.9% of production).

Chart 56. Manufactured production of trucks and road tractors

The production of pleasure and sports boats remains at a relatively high level. This is particularly true for seagoing boats, whose production increased by 63.8% compared to 2018 and compared to 2021, it slightly decreased by 0.7%. On the other hand, the production of boats other than seagoing boats, which dominates in terms of numbers (62.3% of production), showed an increase of 27.3% compared to 2018 and 6.3% compared to 2021.

Table 65. Manufactured production of pleasure and sports boats

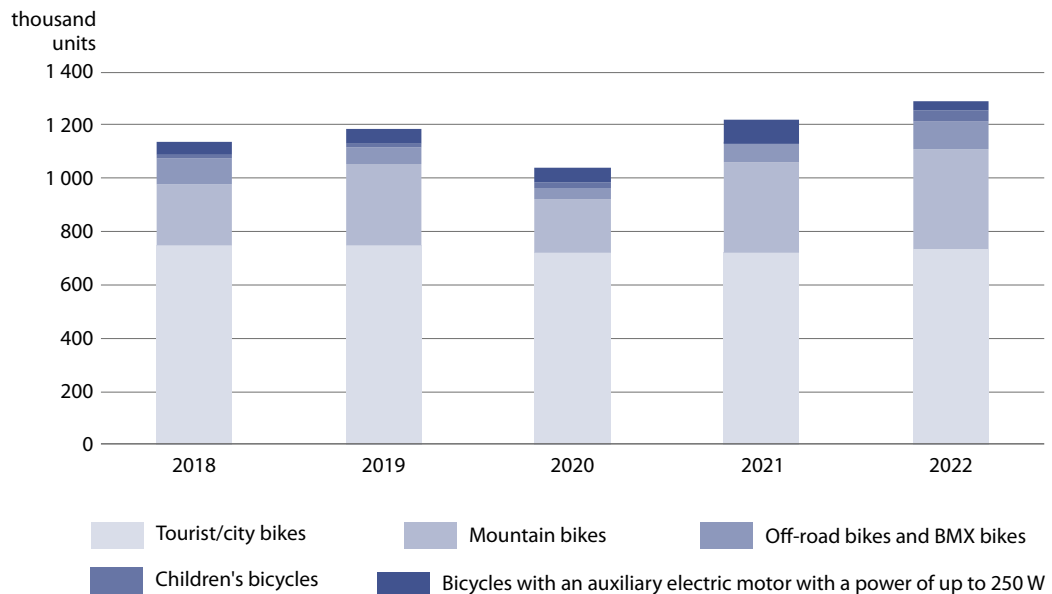
Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Pleasure and sport boats, seagoing	unit	1 970	1 886	2 279	3 251	3 227	163.8	99.3
Pleasure and sport boats, other	unit	4 197	5 665	4 316	5 023	5 341	127.3	106.3

Rail transport plays an important role, but the production of this type of means of transport is not high in Poland. On the other hand, they are dominated by modern, combined multiple units (classified as passenger, freight or transport, rail or self-propelled wagons), whose production increased by 3.5% in 2022 compared to 2021. Despite the decline, the production of locomotives is still small. After the slump in 2021, the production of freight wagons increased significantly by 26.3% in 2022.

Table 66. Manufactured production of railway rolling stock

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Electric locomotives	unit	8	19	61	23	12	150.0	52.2
Passenger cars, freight or transport wagons, railway or tramway, self-propelled	unit	413	573	616	652	675	163.4	103.5
Railway or tram passenger coaches, not self-propelled	unit	367	412	1 206	8	147	40.1	1 837.5
Railway or tram freight wagons, not self-propelled	unit	2 508	3 032	1 884	1 683	2 125	84.7	126.3

The production of bicycles increased during the period under review, with a slight slump in 2020 (COVID-19 pandemic). In 2022, there was an increase of 22.8% compared to 2018 and 8.1% compared to 2021. The dominant position among this group of products is occupied by city/tourist bikes (about 75% of the total production), the production of which remains at a similar level. The production of children's bicycles fluctuated the most.

Chart 57. Manufactured production of bicycles

2.12. Products of furniture industry

Products classified in the division Furniture include furniture manufactured from a variety of materials, including wood, metal, plastic for both domestic and office and shop furnishings, in addition to furniture parts and mattresses.

In the annual survey for 2022, 36 products were included in the statistical observation and for all of them the production produced was reported.

In the analysed period 2018–2022, the manufactured production of wooden furniture was on the rise. There was an increase in the production of wooden kitchen furniture for fitted kitchen, as well as the production of wooden furniture for the dining-room and living-room and wooden furniture for bedroom. In 2022, the largest increase in production was recorded for the production of wooden furniture for the dining-room and living-room – by 25.4% compared to 2018, the production reached 39,226 thousand units. Production of wooden kitchen furniture for fitted kitchen in 2022 amounted to 1,202 thousand units, recording an increase of 15.3% compared to 2018. In third place was wooden furniture for bedroom, whose production in 2022 increased by 4.2% compared to 2018, with a production volume of 7,557 thousand units. In 2022, compared to 2018, there was a 16.4% decrease in the production of wooden furniture, of the type used in the office.

In 2022, there was an increase in production for wooden furniture for kitchens, for fitted kitchen and for wooden furniture of the dining-rooms and living-rooms, compared to the previous year. Production of wooden furniture for the dining-room and living-room increased by 16.4% compared to 2021, while an increase of 6.3% was recorded for production of wooden kitchen furniture for fitted kitchen. A decrease in production in 2022, compared to the previous year, occurred for wooden furniture for bedroom and wooden furniture of a kind used in the office, by 6.2% and 27.6% respectively.

Table 67. Manufactured production of wooden furniture

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Wooden kitchen furniture for fitted kitchen	1000 units	1 043	1 588	1 266	1 131	1 202	115.3	106.3
Wooden furniture for bedroom	1000 units	7 255	7 609	7 142	8 053	7 557	104.2	93.8
Wooden furniture for the dining-room and living-room	1000 units	31 286	32 814	32 073	33 703	39 226	125.4	116.4
Wooden furniture of a kind used in offices	1000 units	3 812	3 971	3 890	4 404	3 187	83.6	72.4

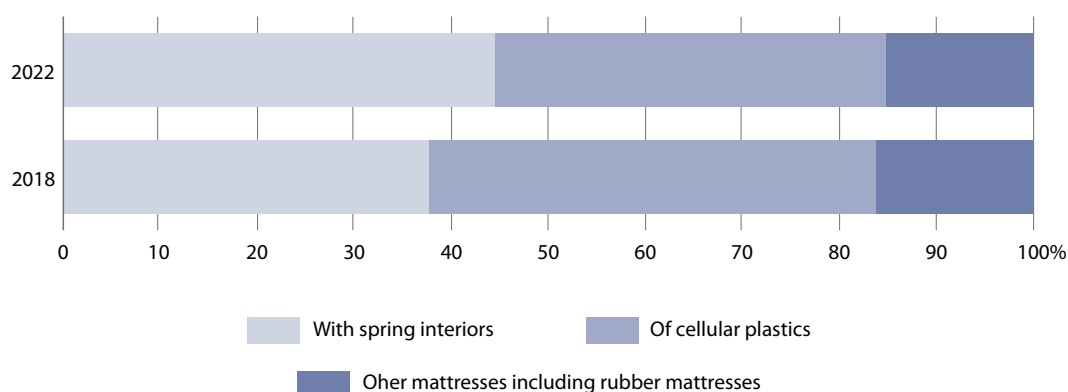
In 2022, the production of plastic furniture increased by 8.6% compared to 2018. However, there were two year-on-year decreases in the period under review, for 2020 – by 3.4% and 2021 – by 25.3%. In 2022, the production of plastic furniture amounted to 4,192 thousand units, up 34.5% on 2021.

Metal furniture production had a downward trend in the period under review. In 2022, production decreased by 57.2% compared to 2018, with a production volume of 4,987 thousand units. A slight increase in production was recorded in 2022 compared to 2021 – by 2.4%.

Table 68. Manufactured production of metal furniture and plastic furniture

Specification	Unit	2018	2019	2020	2021	2022	2022	
							2018=100	2021=100
Metal furniture	1000 units	11 662	10 751	8 505	4 871	4 987	42.8	102.4
Furniture of plastics	1000 units	3 862	4 316	4 171	3 117	4 192	108.6	134.5

In 2022, manufactured production of mattresses amounted to 14,627 thousand units, down 19.0% on the previous year and 8.7% on 2018. The highest production was observed for mattresses with springs interiors, with 6,509 thousand units, and their share of manufactured production was 44.5%. In second place were mattresses made of cellular plastics – 40.3%, with a production of 5,892 thousand units in 2022. The smallest share of production (15.2%) was accounted for other mattresses, including rubber mattresses, and their production reached 2,225 thousand units.

Chart 58. Structure of manufactured production of mattresses

2.13. Secondary raw materials

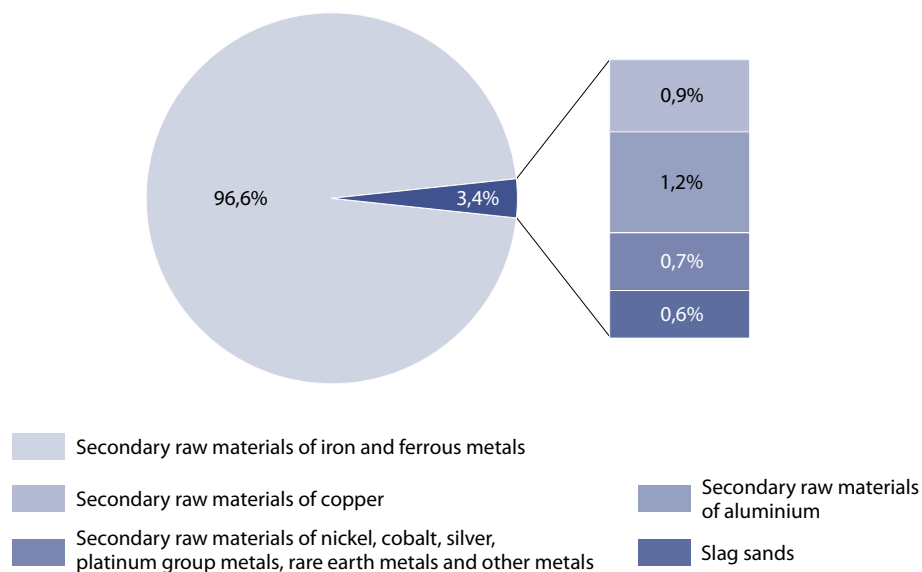
The survey of recovery of secondary raw materials was implemented in the Eurostat product production survey in 2019. However, it was not until 2022 that the division of metallic raw materials into types of recovered metal was introduced. Due to the availability of a short time series, it is currently not possible to carry out a detailed retrospective analysis to draw conclusions on the recovery of secondary raw materials.

The structure of secondary raw materials recovered from metals is dominated by iron raw materials, which in 2022 accounted for about 96.6% of the amount of recovered raw materials. In 2022, the recovery of iron and ferrous metals amounted to 3,948 thousand tonnes. Aluminium came second with 49.9 thousand tonnes and copper third with 36,2 thousand tonnes.

Table 69. Recovery of metallic secondary raw materials in 2022

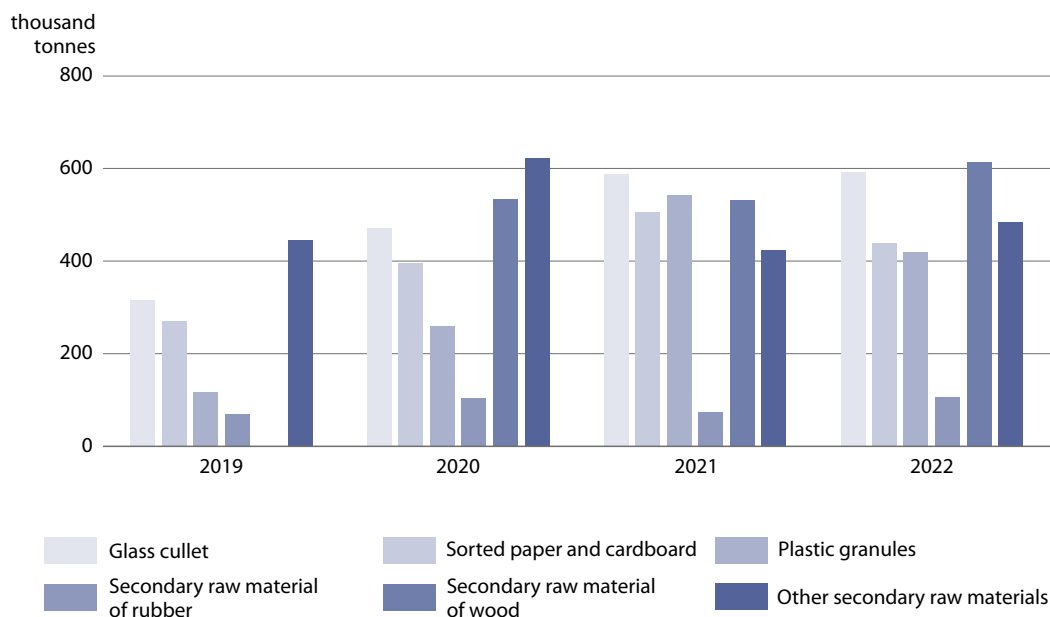
Specification	Quantity Produced	Quantity sold	Value sold in thousand PLN
	tonnes		
Secondary raw materials of iron and ferrous metals	3 948 138	3 908 301	3 332 308.8
Secondary raw materials of copper	36 220	35 715	341 526.4
Secondary raw materials of nickel	215	215	4 781.1
Secondary raw materials of aluminium	49 859	49 752	372 882.8
Secondary raw materials of cobalt	0.8	0.4	641.0
Secondary raw materials of silver	0.2	0.2	254.0
Secondary raw materials of platinum group metals	1 211	1 189	36 673.4
Secondary raw materials of rare earth metals	15.5	15.5	808.2
Secondary raw materials of other metals	27 041	21 863	1 429 487.2
Slag sands	23 349	26 063	1 622.7

Chart 59. Structure of recovery of metallic secondary raw materials in 2022



The recovery of non-metallic secondary raw materials, whose stream is roughly homogeneous and whose processing technologies are well-developed and widespread, showed a clear upward trend until 2021, from 1.22 million tonnes in 2019 to 2.67 million tonnes in 2021, but a slight decrease of 2.1% was observed in 2022. It affected two important raw materials in this group, i.e. plastic pellets and waste paper. The largest increase – by 44.4% compared to the previous year – was recorded in the recovery of rubber, the share of which, however, was not significant among non-metallic secondary raw materials. In terms of volume, wood raw materials dominated in this group of products (production at the level of 613.4 thousand tonnes in 2022).

Chart 60. Recovery of non-metallic secondary raw materials



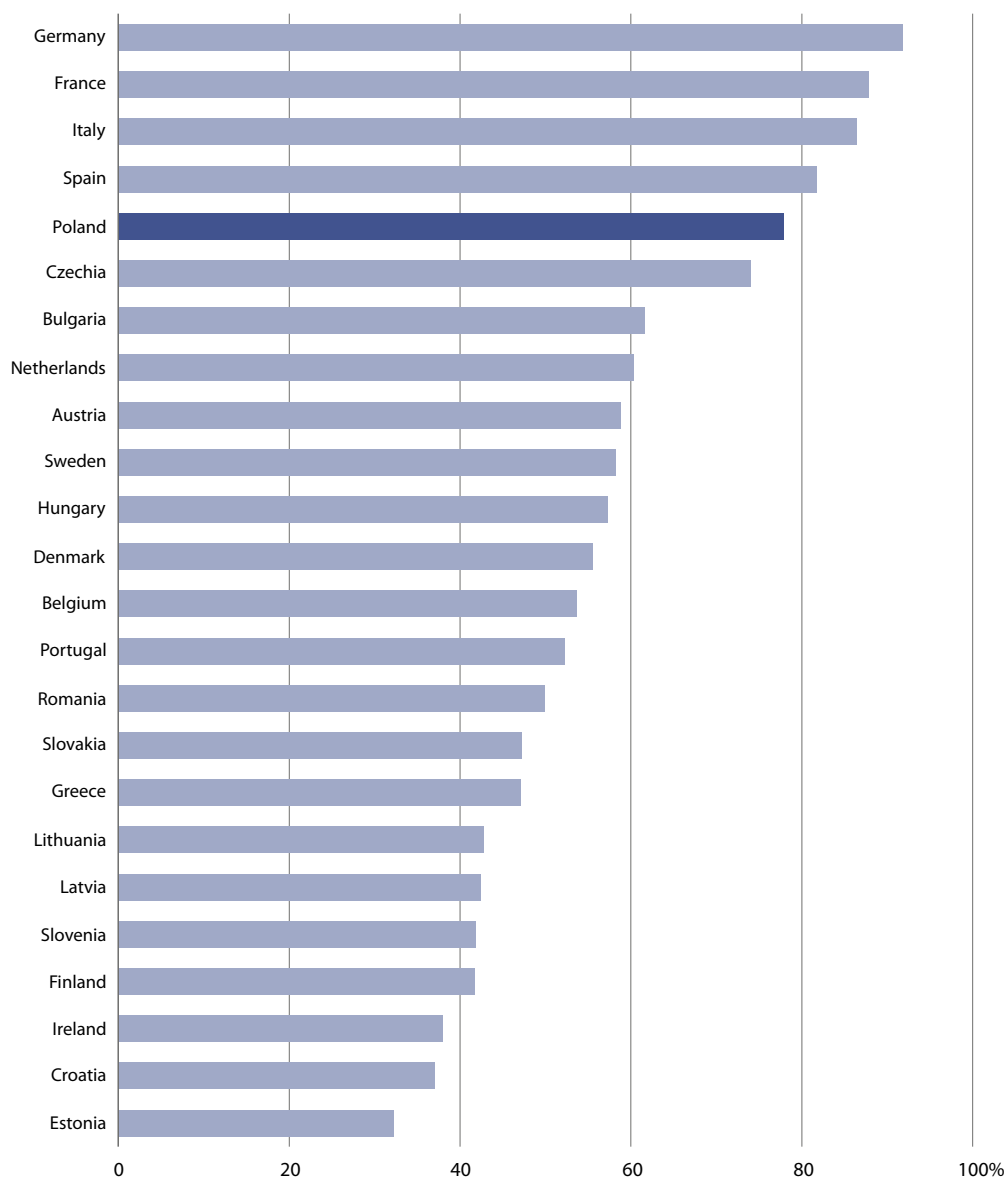
Chapter 3.

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. Energy raw materials are excluded from the PRODCOM List, while the Coke and refined petroleum products section excludes, 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 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 2022 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 2022, similar to 2021 and 2020, Poland was ranked fifth, after Germany, France, Italy and Spain, in terms of the number of PRODCOM items for which sold production was reported. 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 2022 Poland reported sold production data for 3076 products and product assortment groups, which constitutes 77.9% of all items covered by the survey. The highest percentage of products was reported by Germany – 91.8%. The fewest products among EU countries were reported by Croatia and Estonia, with 37.1% and 32.2% of the surveyed items respectively.

Chart 61. Percentage of PRODCOM headings for which sold production was reported for 2022 by EU countries

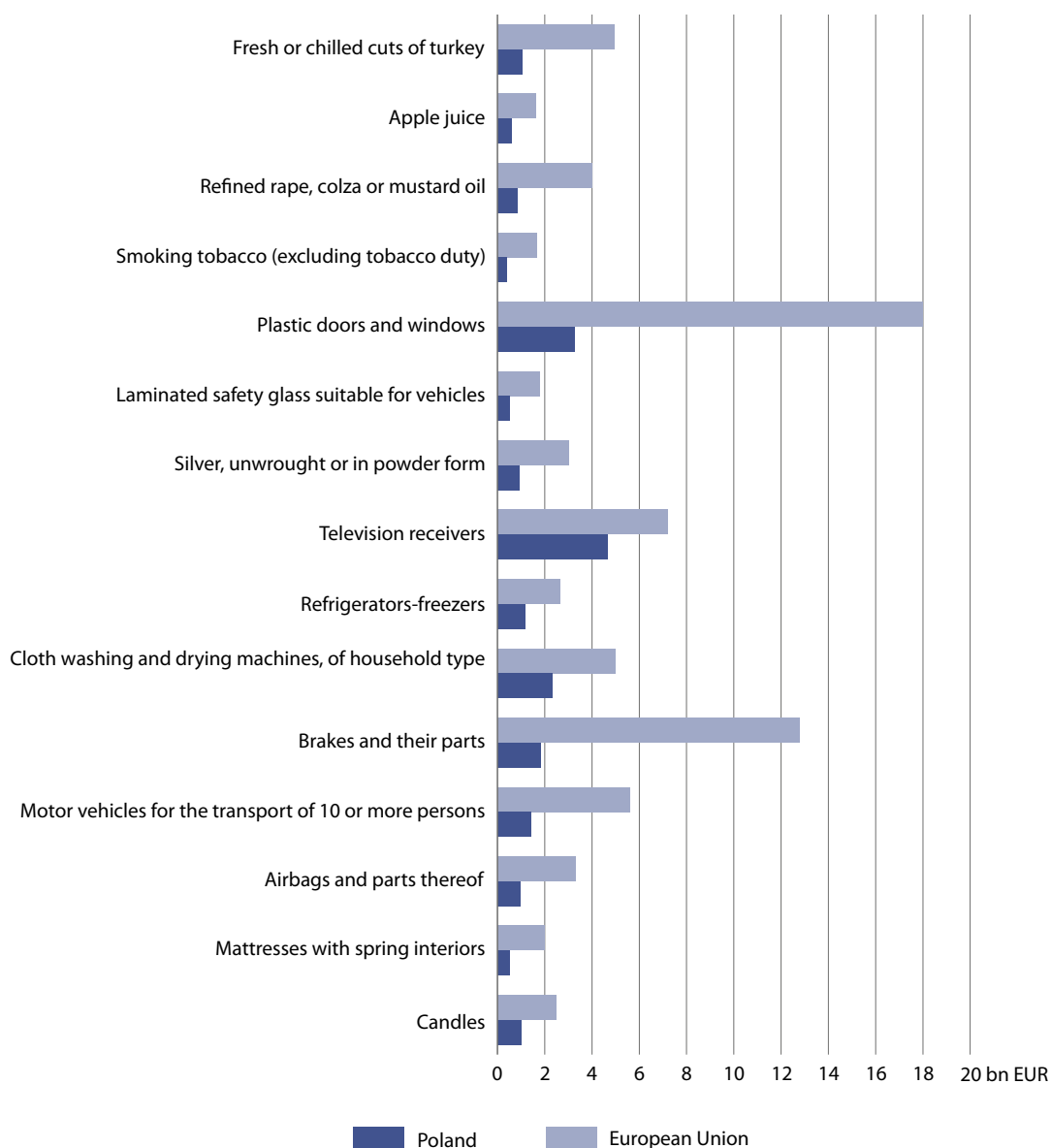
The value of sold production of all products reported by Poland in the PRODCOM survey in 2022 was EUR 354,809.2 million, which accounted for 5.7% of the value of EU27 production. The largest share of EU production was recorded in the following divisions: Tobacco products – 24.2%, Waste collection, treatment and disposal services; materials recovery services – 17.3%, Furniture – 12.8 %, Electrical equipment – 10.4%, Rubber and plastic products – 8.8%, Other non-metallic mineral products – 7.7%, Wood and products of wood, cork and straw – 7.6%, Food products – 7.6%, Paper and paper products – 7.4%. The lowest share in the value of production sold was recorded in the divisions Metal ores, Pharmaceutical products and preparations.

Table 70. Sold production of products covered by PRODCOM survey by selected CPA divisions in 2022

Specification	European Union	Poland	
	in million EUR		in %
Food products	862 672.1	65 325.1	7.6
Beverages	150 338.7	6 880.9	4.6
Tobacco products	8 312.7	2 013.7	24.2
Textiles	60 195.3	2 562.2	4.3
Wearing apparel	30 706.6	1 301.8	4.2
Leather and related products	36 124.8	672.4	1.9
Wood and products of wood, cork and straw	131 019.9	9 953.3	7.6
Paper and paper products	201 126.9	14 856.6	7.4
Printing services and reproduction services of recorded media	49 512.2	2 301.4	4.6
Chemicals and chemical products	546 556.7	26 507.6	4.8
Pharmaceutical products and preparations	220 884.1	3 080.9	1.4
Rubber and plastic products	30 4217.6	26 709.2	8.8
Other non-metallic mineral products	204 003.6	15 742.7	7.7
Basic metals	444 382.1	2 7026.4	6.1
Fabricated metal products	673 434.4	23 715.7	3.5
Computers, electronic and optical products	199 323.9	11 036.4	5.5
Electrical equipment	272 637.6	28 336.9	10.4
Machinery and equipment	562 183.3	14 399.6	2.6
Motor vehicles, trailers and semi-trailers	638 804.1	36 926.6	5.8
Other transport equipment	140 229.1	5 592.9	4.0
Furniture	9 0449.0	11 576.1	12.8
Other manufactured goods	9 5058.0	3 190.8	3.4
Repair and installation services of machinery and equipment	187 896.7	7 810.2	4.2
Waste collection, treatment and disposal services; materials recovery services	32 266.6	5 595.3	17.3

In 2022, for 359 products, Poland's share of European Union sold production in value terms ranged from 10.1% to 20%. The largest number of products with a share between 10.1% and 20% was recorded in the divisions: Food products – 54 products, Rubber and plastic products – 33, Chemicals and chemical products – 32, Electrical equipment and Metals – 25 products each.

Poland's share of over 20% in the value of production sold in the European Union was recorded for 234 products, including television receivers (64.5%), cloth washing and drying machines, of household type (46.1%), refrigerators-freezers (44.7%), candles (39.6%), apple juice (36.9%), silver, unwrought or in powder form (31.3%), airbags and parts thereof (28.8%), motor vehicles for the transport of ≥ 10 persons (25.2%), mattresses with spring interiors (24.7%), smoking tobacco (excluding tobacco duty) (23.3%), laminated safety glass suitable for incorporation in vehicles (22.7%), fresh or chilled cuts of turkey (20.8%).

Chart 62. Sold production value of selected products in Poland and in the European Union in 2022

Poland's share of the European Union's sold production in volume terms was distributed slightly differently than in value terms. In 2022, for 340 products, Poland had a share of between 10.1% and 20% in the volume of production sold in the European Union. Most products were classified in the divisions: Food products – 63 products, Chemicals and chemical products – 33, Machinery and equipment – 29, Rubber and plastic products – 29, Metals – 27, Fabricated metal products – 25, Electrical equipment – 20, Other non-metallic mineral products – 19.

For 286 products, a share of more than 20% in the volume of EU27 sold production was recorded, of which 73 products had a share exceeding 50%, including raw sugar, television receivers, dishwashing machines, medium density fibreboard (MDF) of a thickness not exceeding 5 mm, cloth washing and drying machines, of household type.

Table 71. Number of products with percentage of more than 10% in EU volume of sold production in 2022

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	5	0	2	3	0
Food products	63	17	9	5	5
Beverages	3	1	1	0	0
Tobacco products	1	1	1	0	0
Textiles	11	4	1	3	5
Wearing apparel	17	1	1	1	2
Leather and related products	2	1	2	0	2
Wood and products of wood, cork and straw	10	1	1	1	4
Paper and paper products	16	3	2	1	3
Chemicals and chemical products	33	10	5	5	6
Pharmaceutical products and preparations	0	0	0	0	0
Rubber and plastic products	29	8	1	1	3
Other non-metallic mineral products	19	10	3	2	6
Basic metals	27	7	8	4	3
Fabricated metal products	25	7	7	2	4
Computers, electronic and optical products	9	6	2	4	5
Electrical equipment	20	8	4	2	14
Machinery and equipment	29	8	7	1	4
Motor vehicles, trailers and semi-trailers	7	5	2	0	2
Other transport equipment	8	0	0	0	0
Furniture	1	3	3	4	2
Other manufactured goods	5	3	3	3	3

In 2022, 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 (56.9%), candles (45.9%), mattresses of cellular plastic (41.0%), granite, crude or roughly trimmed (36.5%), vodka (32.7%), apple juice (32.5%), disc harrows (30.2%), plastic baths, showers-baths, sinks and wash-basins (27.6%), liquid dielectric transformers having a power handling capacity ≤ 650 kVA (24.2%), groats and meal of cereals excluding wheat (23.7%), silver, unwrought or in powder form (23.7%), frozen cuts of chicken (23.6%), fire extinguishers (23.2%).

Table 72. Percentage in EU sold production volume of selected products of five selected EU member states in 2022

Specification	France	Spain	Germany	Poland	Italy
	in %				
Granite, crude or roughly trimmed	.	10.2	0.2	36.5	1.5
Limestone, dolomite and other calcareous stone, broken or crushed	13.6	6.1	10.1	17.2	1.0
Fresh or chilled carcasses, half-carcasses and quarters with bone in, of beef and veal	11.1	18.6	16.9	10.2	22.7
Frozen cuts of chicken	7.0	5.7	14.6	23.6	0.9
Frozen fish fillets	3.4	24.7	6.4	13.4	9.3
Apple juice	8.8	6.4	31.4	32.5	4.7
Frozen vegetables and mixtures of vegetables, uncooked or cooked by steaming or boiling in water (excluding potatoes)	10.8	21.1	3.7	12.4	9.0
Refined rape, colza or mustard oil	6.5	.	39.5	14.0	0.3
Milk and cream of a fat content of > 6 but ≤ 21, not concentrated and nor sweetened	26.9	7.1	22.3	15.8	3.6
Butter of a fat content by weight ≤ 85	20.6	.	23.2	13.9	5.1
Fresh cheese (unripened or uncured cheese)	10.5	.	22.1	12.1	27.1
Groats and meal of cereals (excluding wheat)	12.6	30.8	7.5	23.7	.
Uncooked pasta, containing eggs	8.7	0.6	13.0	5.8	60.6
Toffees, caramels and similar sweets	1.3	1.6	33.9	22.5	19.7
Herbal Infusions; incl. bark of African cherry (Prunus africana)	1.4	3.6	28.4	12.3	6.0
Prepared feeds for poultry	17.2	11.6	14.1	16.7	9.9
Vodka	10.0	1.7	8.3	32.7	5.9
Track-suits, of knitted or crocheted textiles	2.2	52.7	0.4	11.2	6.4
Medium density fibreboard (MDF) of a thickness not exceeding 5 mm	.	8.6	10.6	56.9	6.3
Windows, french windows and their frames, of wood	.	1.0	8.9	14.3	27.2
Corrugated paper and paperboard in rolls or sheets	6.8	10.7	17.9	10.9	36.2
Mineral or chemical fertilisers containing the three fertilising elements nitrogen, phosphorus and potassium	3.6	22.2	2.5	10.1	5.9
Biodiesel	.	10.8	23.8	7.5	8.5
Plastic baths, shower-baths, sinks and wash-basins	3.9	14.9	13.6	27.6	12.2
Plastic doors, windows and their frames and thresholds for doors	9.4	2.4	24.4	19.8	5.8
Multiple-walled insulating units of glass	.	7.9	18.3	18.8	3.3

Table 72. Percentage in EU sold production volume of selected products of five selected EU member states in 2022 (cont.)

Specification	France	Spain	Germany	Poland	Italy
	in %				
Portland cement	.	12.5	9.9	11.4	14.0
Silver, unwrought or in powder form	0.0	1.6	28.5	23.7	21.6
Iron or steel reservoirs, tanks, vats and similar containers for solids, of a capacity > 300 litres	3.5	19.6	23.2	14.5	14.8
Liquid supply or production meters	11.8	3.3	13.7	11.2	24.1
Liquid dielectric transformers having a power handling capacity ≤ 650 kVA	.	18.0	7.4	24.2	10.8
Fire extinguishers	24.6	8.2	6.6	23.2	28.1
Refrigerated show-cases and counters, excluding for frozen food storage	3.3	30.8	3.2	8.2	10.1
Disc harrows	31.0	3.3	9.6	30.2	6.0
Containers for carriage, including containers for transporting fluids	4.5	2.8	15.7	13.7	6.9
Mattresses of cellular plastics	.	5.5	18.4	41.0	3.0
Candles	.	3.5	10.5	45.9	11.8

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 monthly and annual surveys 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: 50 or more – the monthly survey, 10 or more – the yearly survey. 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 PKD. 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 (PKD 10-12), the chemical and pharmaceutical industry (PKD 20-21), the manufacture of non-metallic mineral products (PKD 23), the manufacture of basic metals (PKD24) and the jewellery, bijouterie and related products group (PKD 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 company 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.

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.

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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.

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 73. Share in value of sold production of industrial products in PKWiU divisions by the most common predominant activity of entities in 2022

Industrial activity		Non-industrial activity	
Hard coal and lignite			
Mining of coal and lignite	99.4%		
Crude oil			
Electricity, gas, steam, hot water and air conditioning manufacturing and supply	.	Works related to construction of civil engineering	.
Extraction of crude petroleum and natural gas	0.9%		
Mining of metal ores			
Manufacture of metals	.	Wholesale trade	.
Other products of mining and quarrying			
Other mining and quarrying	81.8%	Land transport and transport via pipelines	0.8%
Manufacture of other non-metallic mineral products	9.3%	Works related to construction of civil engineering	0.5%
Manufacture of chemicals and chemical products	4.3%		
Food products			
Manufacture of food products	94.8%	Wholesale trade	2.0%
Manufacture of chemicals and chemical products	.	Crop and animal production, hunting	.
Manufacture of basic pharmaceutical substances and medicines and other pharmaceutical products	0.3%	Retail trade	0.7%
Beverages			
Manufacture of beverages	85.4%	Wholesale trade	.
Manufacture of food products	8.6%		
Manufacture of chemicals and chemical	.		
Tobacco products			
Manufacture of tobacco products	.	Wholesale trade	.
Textiles			
Manufacture of textiles	70.7%	Wholesale trade	3.3%
Manufacture of rubber and plastic products	12.3%		
Manufacture of furniture	.		
Manufacture of motor vehicles, trailers and semi-trailers excluding motorcycles	2.4%		
Manufacture of wearing apparel	1.6%		
Wearing apparel			
Manufacture of wearing apparel	78.1%	Retail trade	.
Manufacture of textiles	2.3%	Wholesale trade	3.3%
Other manufacturing	0.9%		
Leather and related products			
Manufacture of leather and related products	91.2%	Wholesale trade	1.0%
Manufacture of textiles	.	Retail trade	1.0%
Manufacture of wearing apparel	1.4%		

Industrial activity		Non-industrial activity	
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	89.9%	Construction of buildings	1.6%
Manufacture of furniture	2.9%	Wholesale trade	1.4%
Manufacture of paper and paper products	1.9%		
Paper and paper products			
Manufacture of paper and paper products	90.6%	Wholesale trade	0.7%
Printing and reproduction of recorded media	5.3%		
Manufacture of rubber and plastic products	1.0%		
Manufacture of wood and of products of wood and cork, straw and plaiting materials	0.9%		
Printing services and reproduction services of recorded media			
Printing and reproduction of recorded media	68.6%	Publishing activities	18.1%
Manufacture of rubber and plastic products	5.8%	Advertising and market research	1.6%
Manufacture of paper and paper products	2.4%		
Coke and refined petroleum products			
Manufacture of coke and refined petroleum products	97.1%		
Chemicals and chemical products			
Manufacture of chemicals and chemical	77.9%	Wholesale trade	2.1%
Manufacture of coke and refined petroleum products	12.1%		
Manufacture of rubber and plastic products	1.5%		
Manufacture of other non-metallic mineral products	0.9%		
Manufacture of food products	0.7%		
Manufacture of beverages	0.6%		
Pharmaceutical products and preparations			
Manufacture of basic pharmaceutical products	91.7%	Wholesale trade	.
Manufacture of food products	.		
Rubber and plastic products			
Manufacture of rubber and plastic products	86.9%	Wholesale trade	1.5%
Manufacture of motor vehicles, trailers and semi-trailers	2.7%		
Manufacture of chemicals and chemical	2.2%		
Manufacture of fabricated metal products	0.9%		
Other non-metallic mineral products			
Manufacture of other non-metallic mineral products	90.8%	Works related to construction of civil engineering	1.7%
Manufacture of chemicals and chemical	1.9%	Wholesale trade	1.0%
Manufacture of rubber and plastic products	1.6%	Construction of buildings	0.4%
Other mining and quarrying	1.2%		
Basic metals			
Manufacture of basic metals	56.2%	Wholesale trade	3.8%
Mining of metal ores	.		
Manufacture of fabricated metal products	14.4%		
Waste collection, processing and neutralizing activities; materials recovery	.		

Industrial activity		Non-industrial activity	
Fabricated metal products			
Manufacture of fabricated metal products	71.7%	Wholesale trade	2.9%
Manufacture of basic metals	7.5%	Specialised construction activities	1.0%
Manufacture of motor vehicles, trailers and semi-trailers	3.5%		
Manufacture of machinery and equipment	3.5%		
Manufacture of rubber and plastic products	2.9%		
Manufacture of electrical equipment	1.2%		
Computers, electronic and optical products			
Manufacture of computer, electronic and optical products	89.4%	Wholesale trade	1.0%
Manufacture of electrical equipment	2.6%		
Manufacture of other non-metallic mineral products	.		
Manufacture of fabricated metal products	1.8%		
Manufacture of motor vehicles, trailers and semi-trailers	.		
Manufacture of machinery and equipment	0.5%		
Electrical equipment			
Manufacture of electrical equipment	81.8%	Wholesale trade	0.8%
Manufacture of motor vehicles, trailers and semi-trailers	5.4%	Works related to construction of civil engineering	0.3%
Manufacture of computer, electronic and optical products	4.2%		
Manufacture of fabricated metal products	2.3%		
Manufacture of machinery and equipment	1.4%		
Repair, maintenance and installation of machinery and equipment	1.4%		
Machinery and equipment			
Manufacture of machinery and equipment	58.8%	Wholesale trade	3.1%
Manufacture of fabricated metal products	16.3%	Works related to construction of civil engineering	0.1%
Manufacture of motor vehicles, trailers and semi-trailers	12.7%	Specialised construction activities	0.1%
Manufacture of computer, electronic and optical products	2.1%	Retail trade	0.1%
Manufacture of rubber and plastic products	1.8%		
Manufacture of electrical equipment	1.6%		
Manufacture of basic metals	1.0%		
Repair, maintenance and installation of machinery and equipment	0.6%		
Motor vehicles, trailers and semi-trailers			
Manufacture of motor vehicles, trailers and semi-trailers	87.8%	Wholesale trade	.
Manufacture of fabricated metal products	3.3%		
Manufacture of textiles	.		
Manufacture of machinery and equipment	1.7%		
Manufacture of rubber and plastic products	0.8%		
Manufacture of electrical equipment	0.5%		

Industrial activity		Non-industrial activity	
Other transport equipment			
Manufacture of other transport equipment	92.1%	Wholesale trade	0.2%
Manufacture of fabricated metal products	2.3%	Works related to construction of civil engineering	.
Manufacture of basic metals	.	Scientific research and development	..
Other manufacturing	1.0%		
Manufacture of motor vehicles, trailers and semi-trailers	0.7%		
Furniture			
Manufacture of furniture	86.8%	Wholesale trade	0.7%
Manufacture of textiles	2.4%	Retail trade	0.4%
Manufacture of fabricated metal products	2.2%		
Manufacture of wood and of products of wood and cork	2.0%		
Manufacture of motor vehicles, trailers and semi-trailers	.		
Other manufactured goods			
Other manufacturing	77.2%	Wholesale trade	2.1%
Manufacture of rubber and plastic products	7.7%	Retail trade	0.4%
Manufacture of fabricated metal products	1.7%		
Manufacture of basic pharmaceutical products	1.2%		
Manufacture of computer, electronic and optical products	1.0%		
Manufacture of other non-metallic mineral products	.		

Annex 2

Abbreviations of descriptions of sections, divisions and products

Complete name	Abbreviation
Division of PKD	
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
Limestone flux, limestone and other calcareous stone used for the manufacture of lime or cement (excluding crushed limestone aggregate and calcareous dimension stone)	Calcareous stone used for the manufacture of lime or cement
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

Complete name	Abbreviation
Canned pork, beef, veal meat, including shoulders and hams and canned edible meat offal	Canned beef and veal meat
Prepared or preserved salmon, whole or in pieces (excluding minced products and prepared meals and dishes)	Prepared or preserved salmon, whole or in pieces
Crustaceans frozen, dried, salted or in brine for consumption	Crustaceans frozen, dried, salted or in brine
Molluscs (scallops, mussels, cuttle fish, squid and octopus), frozen, dried, salted or in brine	Molluscs frozen, dried, salted or in brine
Frozen vegetables and mixtures of vegetables, uncooked or cooked by steaming or boiling in water (excluding potatoes)	Frozen vegetables (excluding potatoes)
Frozen fruit and nuts uncooked or cooked	Frozen fruit and nuts
Refined rape, colza or mustard oil and their fractions (excluding chemically modified)	Refined rape, colza or mustard oil
Dried fruit (excluding grapes); mixtures of dried nuts and/or dried fruits	Dried fruit (excluding grapes)
Margarine and reduced and low fat spreads (excluding liquid margarine)	Margarine
Processed liquid milk	Milk
Milk and cream of a fat content by weight of > 6% but ≤ 21%, not concentrated nor containing added sugar or other sweetening matter, in immediate packings of ≤ 2 l	Milk and cream of a fat content of > 6% but ≤ 21%, not concentrated and nor sweetened
Butter and dairy spreads	Butter
Butter of a fat content by weight no more than 85% and content by weight 80% and less	Butter of a fat content no more than 85%
Fresh cheese (unripened or uncured cheese), including whey cheese and curd	Fresh cheese (unripened or uncured cheese)
Processed cheese (excluding grated or powdered)	Processed cheese
Yoghurt (including solid yoghurt)	Yoghurt
Kefir, curdled milk and cream, containing added or not fruit or cocoa	Kefir
Buttermilk in liquid form with a fat content not exceeding 3% by weight	Buttermilk in liquid form
Chips (potato crisps suitable for direct consumption)	Crisps
Groats and meal of oats, maize, rice, rye, barley and other cereals (excluding wheat)	Groats and meal of cereals (excluding wheat)
Fresh bread containing by weight in the dry matter state ≤ 5% of sugars and ≤ 5% of fat (excluding with added honey; eggs; cheese or fruit)	Fresh bread
Uncooked pasta, containing eggs (excluding stuffed or otherwise prepared)	Uncooked pasta, containing eggs
Raw cane and beet sugar in solid form, not containing added flavouring or colouring matter	Raw sugar
Sugar in terms of white sugar	Sugar
Tea in immediate packings of a content ≤ 3 kg	Tea in immediate packings of a content 3 kg and less
Prepared feeds for farm animals: pigs	Prepared feeds for pigs
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 ≤ 45.4%	Vodka
Beer made from malt (excluding non-alcoholic beer, beer containing ≤ 0.5% by volume of alcohol, alcohol duty)	Beer, excluding non-alcoholic beer

Complete name	Abbreviation
Non-alcoholic beer and beer containing $\leq 0.5\%$ alcohol	Non-alcoholic beer
Cigarettes containing tobacco or mixtures of tobacco and tobacco substitutes	Cigarettes
Articles of bedding including quilts and eiderdowns, cushions, pouffes, pillows, excluding mattresses, sleeping bags	Articles of bedding
Blankets and travelling rugs, except electric blankets	Blankets and travelling rugs
Carpets, knotted, woven, needle-punched and n. e. c.	Carpets
Rugs knotted, woven, needle-punched and n. e. c.	Rugs
Floor coverings knotted, woven, needle-punched and n. e. c.	Floor coverings
Car mats, knotted, woven, tufted	Car floor mats
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
Slippers and other indoor footwear with rubber or plastic outer soles and plastic uppers (including bedroom and dancing slippers, mules)	Slippers and other indoor footwear
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
Chemical wood pulp, soda or sulphate, other than dissolving grades	Wood pulp
Selected and sorted paper and cardboard sent for reprocessing	Paper and cardboard
Uncoated, unbleached kraftliner in rolls or sheets (excluding for writing, printing or other graphic purposes, punch card stock and punch card tape paper)	Uncoated, unbleached kraftliner
Cartons, boxes and cases, of corrugated paper or paperboard	Cartons of corrugated paper or paperboard

Complete name	Abbreviation
Folding cartons, boxes and cases of non-corrugated paper or paperboard	Folding cartons of non-corrugated paper or paperboard
Sulphite wrapping paper and other uncoated paper (other than that of a kind used for writing, printing or other graphic purposes)	Sulphite wrapping paper and other uncoated paper
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 fibers, (excluding toilet paper, sanitary towels, tampons and similar articles)	Napkins and napkin liners for babies
Printed newspapers, journals and periodicals, appearing at least four times a week	Printed newspapers, appearing at least four times a week
Coke and semi-coke obtained from coal, lignite, peat; retort carbon	Coke
Wood charcoal whether or not agglomerated (including shell or nut charcoal)	Charcoal
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
Poly(ethylene terephthalate), in primary forms	Poly (ethylene terephthalate)
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.)
Medicaments containing insulin but not antibiotics, for therapeutic or prophylactic uses, not put up in measured doses or for retail sale	Medicaments containing insulin but not antibiotics
Medicaments containing hormones but not antibiotics, for therapeutic or prophylactic uses, not put up in measured doses or for retail sale (excluding insulin)	Hormone-containing medicines
Medicaments of alkaloids or derivatives thereof, not packaged for retail sale.	Medicines containing alkaloids or derivatives thereof

Complete name	Abbreviation
Medicaments containing vitamins, provitamins, derivatives and intermixtures thereof, for therapeutic or prophylactic uses, put up in measured doses or for retail sale	Medicines containing vitamins, provitamins, their derivatives and mixtures thereof
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 carboys, bottles, flasks and similar articles for the conveyance or packing of goods, of a capacity \leq 2 litres (does not include PET preforms)	Plastic carboys, bottles, flasks and similar articles, of a capacity \leq 2 litres
Plastic carboys, bottles, flasks and similar articles for the conveyance or packing of goods (does not include PET preforms)	Plastic carboys, bottles, flasks and similar articles
Articles for the conveyance or packaging of goods, of plastics (excluding boxes, cases, crates and similar articles; sacks and bags, including cones; carboys, bottles, flasks and similar articles; spools, spindles, bobbins and similar supports; stoppers, lids, caps and other closures)	Articles for the conveyance or packaging of goods, of plastics, other
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
Laminated safety glass, of size and shape suitable for incorporation in motor vehicles, aircraft, spacecraft, vessels and other vehicles	Laminated safety glass suitable for vehicles
Glass preserving jars, stoppers, lids and other closures (including stoppers and closures of any material presented with the containers for which they are intended)	Glass preserving jars, stoppers, lids and other closures
Bottles of colourless glass of a nominal capacity < 2,5 litres, for beverages and foodstuffs (excluding bottles covered with leather or composition leather, infant's feeding bottles)	Bottles of colourless glass of a nominal capacity
Bottles of coloured glass of a nominal capacity < 2,5 litres, for beverages and foodstuffs (excluding bottles covered with leather or composition leather, infant's feeding bottles)	Bottles of coloured glass of a capacity < 2,5 litres for beverages and foodstuffs (excluding infant's feeding bottles)
Glass containers for beverages and foodstuffs of a nominal capacity < 2,5 litres (excluding bottles, flasks covered with leather or composition leather, domestic glassware, vacuum flasks and vessels)	Glass containers for beverages and foodstuffs of a nominal capacity < 2,5 litres
Glass containers of a nominal capacity < 2,5 litres for the conveyance or packing of goods (excluding for beverages and foodstuffs, for pharmaceutical products, containers made from glass tubing)	Glass containers of a nominal capacity < 2,5 litres for the conveyance or packing of goods
Non-wired sheets, of float, surface ground or polished glass, having an absorbent or reflecting layer, not otherwise worked, of a thickness > 3,5 mm	Non-wired sheets, of float, surface ground or polished glass having an absorbent or reflecting layer
Portland cement, aluminous cement, slag cement and similar hydraulic cements	Cement
Quicklime, slaked lime and hydraulic lime	Lime
Ready-mixed concrete	Ready-mixed concrete

Complete name	Abbreviation
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
Rails of iron or steel for railway track	Steel rails
Silver, unwrought or in powder form (including plated with gold or platinum)	Silver, unwrought or in powder form
Unwrought non-alloy aluminium (excluding powders and flakes)	Unalloyed aluminium
Refined unwrought lead (excluding lead powders or flakes)	Refined unwrought lead
Unwrought non-alloy zinc (excluding zinc dust, powders and flakes)	Unwrought non-alloy zinc, technically pure
Unwrought zinc alloys (excluding zinc dust, powders and flakes)	Unwrought zinc alloys, technically pure, from elec-trolysis
Unwrought unalloyed refined copper (excluding rolled, extruded or forged sintered products)	Unwrought, unalloyed refined copper
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
Iron or steel reservoirs, tanks, vats and similar containers for gases, of a capacity > 300 litres (excluding compressed or liquefied gas, fitted with mechanical or thermal equipment)	Iron or steel reservoirs, tanks and similar containers for gases
Iron or steel reservoirs, tanks, vats and similar containers for liquids, of a capacity > 300 litres (excluding fitted with mechanical or thermal equipment, lined or heat insulated)	Iron or steel reservoirs, tanks and similar containers for liquids
Iron or steel reservoirs, tanks, vats and similar containers for solids, of a capacity > 300 litres (excluding fitted with mechanical or thermal equipment)	Iron or steel reservoirs, tanks and similar containers for solids
Aluminium reservoirs, tanks, vats and similar containers for any material (other than compressed or liquefied gas), of a capacity > 300 litres (excluding fitted with mechanical or thermal equipment)	Aluminium reservoirs, tanks, vats and similar containers for any material
Tanks, casks, drums, cans, boxes and similar containers, for any material (excluding gas), of iron or steel, of a capacity ≥ 50 l but ≤ 300 l, not fitted with mechanical or thermal equipment	Tanks and similar containers, for any material (excluding gas), of iron or steel, of a capacity ≥ 50 l but ≤ 300 l
Tanks, casks, drums, cans (except those to be closed by soldering or crimping), boxes and similar containers, for any material (excluding gas), of iron or steel, of a capacity < 50 l, not fitted with mechanical or thermal equipment	Tanks and similar containers, for any material (excluding gas), of iron or steel, of a capacity < 50 l
Cans used for preserving food and drink of iron or steel, < 50 l, food cans	Cans used for preserving food and drink of iron or steel, < 50 l, food cans

Complete name	Abbreviation
Cans used for preserving food and drink of iron or steel, < 50 l, drinks	Cans used for preserving food and drink of iron or steel, < 50 l, drinks
Aluminium casks, drums, cans, boxes and similar containers, for any material (excluding gas), of a capacity ≤ 300 l	Aluminium casks and similar containers, for any material (excluding gas), of a capacity ≤ 300 l
Nails, tacks, drawing pins, corrugated nails, staples (other than those of HS 8305) and similar articles of iron, steel, copper, aluminium	Nails and similar articles of iron, steel, copper, aluminium
Barbed wire and barbed wire entanglements made from steel or steel wire	Barbed wire from steel or steel wire
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
Table, kitchen or household articles and parts thereof, of iron, steel, copper or aluminium	Table, kitchen or household articles and parts thereof of metal
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
Loudspeakers (including speaker drive units, frames or cabinets mainly designed for mounting loudspeakers) (excluding those mounted in their enclosures)	Loudspeakers, not mounted in enclosures
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
Combined refrigerators-freezers, with separate external doors or drawers, or combinations thereof	Refrigerators-freezers
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)
Mixing valves for sinks, wash basins, bidets, water cisterns etc. excluding valves for pressure-reducing or oleohydraulic/pneumatic power transmissions, check valves, safety/relief valves	Mixing valves
Accounting machines and similar machines incorporating a calculating device	Accounting machines and similar machines
Refrigerated show-cases and counters incorporating a refrigerating unit or evaporator for frozen food storage	Refrigerated show-cases and counters for frozen food storage
Refrigerated show-cases and counters incorporating a refrigerating unit or evaporator (excluding for frozen food storage)	Refrigerated show-cases and counters, excluding for frozen food storage
Machining centres, unit construction machines and multi-station transfer machines, for working metal	Machining centres and unit construction machines for working metal
Refrigerated show-cases and counters incorporating a refrigerating unit or evaporator for frozen food storage	Refrigerated show-cases and counters for frozen food storage
Refrigerated show-cases and counters incorporating a refrigerating unit or evaporator (excluding for frozen food storage)	Refrigerated show-cases and counters, excluding for frozen food storage
Machining centres, unit construction machines and multi-station transfer machines, for working metal	Machining centres and unit construction machines for working metal

Complete name	Abbreviation
Silniki spalinowe tłokowe wewnętrznego spalania o zapłonie samoczynnym (wysoko – lub średnioprężne) (z wyłączeniem stosowanych do napędu taboru szynowego lub kołowych ciągników rolniczych lub leśnych oraz silników okrętowych) Vehicle compression-ignition internal combustion piston engines (diesel or semi-diesel) (excluding for railway or tramway rolling stock and wheeled agricultural or forestry tractors)	Silniki o zapłonie samoczynnym do pojazdów Vehicle compression-ignition engines
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 $> 2500 \text{ cm}^3$
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
Containers specially designed and equipped for carriage by one or more modes of transport (including containers for transporting fluids)	Containers for carriage, including containers for transporting fluids
Airbags with inflator system and parts thereof	Airbags and parts thereof
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
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
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
Candles, tapers and the like (including night lights fitted with a float) (excluding anti-asthmatic candles, wax matches or vestas, sulphur-treated bands, wicks and candles)	Candles
Selected and sorted paper and cardboard sent for reprocessing	Paper and cardboard