

2022 GLOBAL MANUFACTURING & MARKETS

Equipment Type: Inkjet inks

Industry: Printing ink manufacturing

Equipment Code: 32591E116

© Barnes Reports

2022

- *Market Reports*
- *Industry Trends*
- *Demographic Data*

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Regional Markets

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Algeria	DZA	Cuba	CUB
Angola	AGO	Cyprus	CYP
Argentina	ARG	Czech Republic	CZE
Armenia	ARM	Denmark	DNK
Australia	AUS	Dominican Republic	DOM
Austria	AUT	Ecuador	ECU
Azerbaijan	AZE	Egypt, Arab Rep.	EGY
Bahamas, The	BHS	El Salvador	SLV
Bahrain	BHR	Equatorial Guinea	GNQ
Bangladesh	BGD	Estonia	EST
Belarus	BLR	Ethiopia	ETH
Belgium	BEL	Finland	FIN
Bolivia	BOL	France	FRA
Bosnia and Herzegovina	BIH	Gabon	GAB
Botswana	BWA	Georgia	GEO
Brazil	BRA	Germany	DEU
Brunei Darussalam	BRN	Ghana	GHA
Bulgaria	BGR	Greece	GRC
Burkina Faso	BFA	Guam	GUM
Burundi	BDI	Guatemala	GTM
Cambodia	KHM	Guinea	GIN
Cameroon	CMR	Haiti	HTI
Canada	CAN	Honduras	HND
Chad	TCD	Hong Kong SAR, China	HKG
Chile	CHL	Hungary	HUN
China	CHN	Iceland	ISL
Colombia	COL	India	IND
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Costa Rica	CRI	Iraq	IRQ

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Country Name	Country Code	Country Name	Country Code
Ireland	IRL	New Zealand	NZL
Israel	ISR	Nicaragua	NIC
Italy	ITA	Nigeria	NGA
Jamaica	JAM	Norway	NOR
Japan	JPN	Oman	OMN
Jordan	JOR	Pakistan	PAK
Kazakhstan	KAZ	Panama	PAN
Kenya	KEN	Papua New Guinea	PNG
Korea, Rep.	KOR	Paraguay	PRY
Kosovo	XKX	Peru	PER
Kuwait	KWT	Philippines	PHL
Kyrgyz Republic	KGZ	Poland	POL
Lao PDR	LAO	Portugal	PRT
Latvia	LVA	Puerto Rico	PRI
Lebanon	LBN	Qatar	QAT
Lithuania	LTU	Romania	ROU
Luxembourg	LUX	Russian Federation	RUS
Macao SAR, China	MAC	Saudi Arabia	SAU
Macedonia, FYR	MKD	Senegal	SEN
Madagascar	MDG	Serbia	SRB
Malaysia	MYS	Singapore	SGP
Mali	MLI	Slovak Republic	SVK
Malta	MLT	Slovenia	SVN
Mauritius	MUS	South Africa	ZAF
Mexico	MEX	South Sudan	SSD
Moldova	MDA	Spain	ESP
Mongolia	MNG	Sri Lanka	LKA
Morocco	MAR	Sudan	SDN
Mozambique	MOZ	Sweden	SWE
Myanmar	MMR	Switzerland	CHE
Namibia	NAM	Tanzania	TZA
Nepal	NPL	Thailand	THA
Netherlands	NLD	Trinidad and Tobago	TTO

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Country Name	Country Code		
Tunisia	TUN	Uruguay	URY
Turkey	TUR	Uzbekistan	UZB
Turkmenistan	TKM	Venezuela, RB	VEN
Uganda	UGA	Vietnam	VNM
Ukraine	UKR	West Bank and Gaza	PSE
United Arab Emirates	ARE	Yemen, Rep.	YEM
United Kingdom	GBR	Zambia	ZMB
United States	USA	Zimbabwe	ZWE

Users' Guide

Equipment Type: Inkjet inks

Industry: Printing ink manufacturing

About this Report

This report covers the global forecast for inkjet inks produced in the inkjet inks industry.

More than 140 countries are featured in this report as well as global and regional summaries. Estimates on equipment or material sales (product shipments value) are published for six historical years and two forecast years. Product shipments include the total value of all products produced and shipped by all producers. For selected products, this can represent value of receipts, value of production, or value of work done.

These estimates product shipment values are also considered "market potentials" because the calculations assume efficient, free markets. Estimates can vary in countries with inefficient, closed markets with such issues as oppressive regulations and tariffs, black markets, and political problems impacted a regular business cycle.

Published annually, this report provides a unique and accurate estimate on market sizing for this equipment/material using a proprietary economic model that integrates historical trends (horizontal analysis) and longitudinal analysis of incorporated industries (vertical analysis).

Product shipments value are presented in US Dollars and local currency units for historical and forecast years.

Regional summaries include North America, Europe, Asia-Pacific, Latin America, Africa, and Middle East. Percent shares are presented for each region as a share of the global market.

Product shipments values are also broken down by related costs, such as cost of materials, cost of fuels/electricity and value added, as well as capital expenditures, such as expenditures on buildings, machinery, vehicles and computers.

This report does not list key players/companies in the market but focuses on a top-down and outlook view of the market despite the existing and entering of market companies.

Users' Guide

Users' Guide

Barnes Reports is a leading publisher of industry studies on U.S. and global industries and forecasts sales and employment demographics. As a way of making the most of this information, we have included a few suggestions and tips to aid users in processing and using this information.

Managers, planners, and market researchers use this information for a variety of activities:

- Sizing markets and segments – You can estimate the size of the regional markets you sell in and your company's market penetration into that market. You can do the same with the market segments in which you participate.
- Sales territory potential – You can estimate your market penetration and also the market potential in any regional area or market segment.
- Sales forecasting – With the estimates on the size of the industry, market researchers supporting a sales force can then estimate and forecast the future size of the industry.
- Advertising strategies – You can use this information for forecasting and estimating sales potential and target advertising campaigns.
- Competitive analysis – You will use the information to locate your possible competitors (if it is not already known), to estimate their size, growth and strengths and weaknesses and to see what market segments in which they participate.

We recognize that many managers today are asked to provide detailed analysis of their markets, sales territories, distribution channels, and product placements. We have organized these reports in a logical format making your market analysis and research tasks easy to accomplish.

Definitions & Methodology

Equipment Type: Inkjet inks

Industry: Printing ink manufacturing

Definitions

The equipment described in this report are primarily defined by its title since the title is generally long and includes most of the criteria used to differentiate the equipment from other similar equipment. The equipment descriptions are sourced from the U.S. Census. Additionally descriptions can be collected from the manufacturing industry descriptions that each equipment is categorized. The U.S. Census manufacturing industry descriptions for equipment are listed below:

NAICS 32511: Petrochemical manufacturing

This industry comprises establishments primarily engaged in (1) manufacturing acyclic (i.e., aliphatic) hydrocarbons such as ethylene, propylene, and butylene made from refined petroleum or liquid hydrocarbons and/or (2) manufacturing cyclic aromatic hydrocarbons such as benzene, toluene, styrene, xylene, ethyl benzene, and cumene made from refined petroleum or liquid hydrocarbons.

NAICS 32512: Industrial gas manufacturing

This industry comprises establishments primarily engaged in manufacturing industrial organic and inorganic gases in compressed, liquid, and solid forms.

NAICS 32513: Synthetic dye and pigment manufacturing

This industry comprises establishments primarily engaged in manufacturing synthetic organic and inorganic dyes and pigments, such as lakes and toners (except electrostatic and photographic).

NAICS 32518: Other basic inorganic chemical manufacturing

This industry comprises establishments primarily engaged in manufacturing basic inorganic chemicals (except industrial gases and synthetic dyes and pigments).

NAICS 32519: Other basic organic chemical manufacturing

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This industry comprises establishments primarily engaged in manufacturing basic organic chemicals (except petrochemicals, industrial gases, and synthetic dyes and pigments).

NAICS 32521: Resin and synthetic rubber manufacturing

This industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing synthetic resins, plastics materials, and nonvulcanizable elastomers and mixing and blending resins on a custom basis; (2) manufacturing noncustomized synthetic resins; and (3) manufacturing synthetic rubber.

NAICS 32522: Artificial and synthetic fibers and filaments manufacturing

This industry comprises establishments primarily engaged in (1) manufacturing cellulosic (e.g., rayon, acetate) and noncellulosic (e.g., nylon, polyolefin, polyester) fibers and filaments in the form of monofilament, filament yarn, staple, or tow or (2) manufacturing and texturing cellulosic and noncellulosic fibers and filaments.

NAICS 32531: Fertilizer manufacturing

This industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing nitrogenous or phosphatic fertilizer materials; (2) manufacturing fertilizers from sewage or animal waste; (3) manufacturing nitrogenous or phosphatic materials and mixing with other ingredients into fertilizers; and (4) mixing ingredients made elsewhere into fertilizers.

NAICS 32532: Pesticide and other agricultural chemical manufacturing

This industry comprises establishments primarily engaged in the formulation and preparation of agricultural and household pest control chemicals (except fertilizers).

NAICS 32541: Pharmaceutical and medicine manufacturing

This industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing biological and medicinal products; (2) processing (i.e., grading, grinding, and milling) botanical drugs and herbs; (3) isolating active medicinal principals from botanical drugs and herbs; and (4) manufacturing pharmaceutical products intended for internal and external consumption in such forms as ampoules, tablets, capsules, vials, ointments, powders, solutions, and suspensions.

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Methodology

Barnes Reports' Global Manufacturing & Markets report series provide estimates of the size and characteristics of the largest equipment, materials and consumables by manufacturing industries in the largest 140 global countries. These estimates are produced by a proprietary economic model that is based on a number of sources and factors:

1. The size of U.S. manufacturing equipment, materials and consumables from the U.S. Economic Census over the last twenty years.
2. Estimate current and forecast size of U.S. equipment, materials and consumables using regression analysis.
3. Adjust estimates and forecasts using the most current U.S. manufacturing industry data and trends. This adjustment adds vertical (industry) analysis to the forementioned horizontal (trend) analysis.
4. Global estimates use trend GDP data and the ratio of manufacturing industries to GDP by country from World Bank databases to compare U.S. versus global countries size and trends.

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2022 GLOBAL MANUFACTURING SECTOR FORECAST

The global economic forecast for 2022 is continuing to rebound from the decline in 2020 due to the COVID-19 crisis. Barnes Reports is forecasting 4.9 percent GDP growth from 2021 to 2022 globally. GDP forecasts for the largest countries include 5.5 percent for the United States, 6.6 percent for China, 7.6 percent for India, 2.5 percent for Japan and 4.9 percent for Germany.

The global manufacturing sector forecast for 2022 will be slightly lower than the growth in GDP. Barnes Reports is forecasting 3.7 percent global manufacturing sector growth from 2021 to 2022. The transportation manufacturing subsector will experience the highest growth of 6.0 percent.

A subsector that is trailing the sector average forecast growth from 2021 to 2022 is food and beverage manufacturing (1.0 percent).

NAICS CODE	INDUSTRY TITLE	2022 Sales (\$Mill)	2021-2022 % Change
311	Food and beverage manufacturing	6,129,000	1%
325	Chemical manufacturing	4,958,000	3%
332	Fabricated metal product mfg.	2,427,000	4%
333	Machinery manufacturing	2,444,000	3%
334	Computer and electronic product mfg.	2,275,000	6%
335	Electrical equip., appliance mfg.	881,000	5%
336	Transportation equipment mfg.	6,914,000	6%
339	Miscellaneous manufacturing	938,000	1%

The largest subsector in the manufacturing sector is the transportation equipment manufacturing subsector (6.9 trillion for 2022).

Political Issues

Political issues in the United States in 2021 continue to divide the country. While Democrats hold power in the Executive branch and the House of Representatives, the Senate is divided with Republicans able to stop most bills. At the time of publication in late 2021, President Biden's approval rating is among the lowest since 1950.

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The President's low approval rating is mainly due to 1) a botched withdrawal from Afghanistan, 2) high inflation and gas prices, 3) high immigration rates, 4) low labor participation rates, and 5) COVID mandates. Racial issues continue to divide the country in schools and court rooms. Despite these issues, the President was able to pass the Infrastructure bill in November 2021 which many citizens like but supply shortages and a tight labor market will complicate building plans.

The supply chain crisis in late 2021 will continue into 2022, as West coast ports struggle to unload nearly 100 container ships from China and East Asian countries. A lack of truck drivers and port operators will not be corrected for months until 1) the labor participation rate increases and 2) COVID fears decrease. The supply chain problems are one major reason for the highest inflation rates that the U.S. has experienced since the 1970s.

Finance Issues

While top investors say that the U.S. stock market likes a divided government, Barnes Reports is forecasting that the stock market will slow grow to new highs, but it will pullback if the Biden administration is able to pass new business regulations, restrictive environmental laws, and/or new corporate taxes and many investors will take earnings out of the market.

Capital equipment spending by businesses in other sectors, a key driver of manufacturing profitability, has been dropped off rapidly due to the undercertainty of the COVID virus. Equipment investment growth accelerated to 4.8 percent during 2017 in the United States according to the U.S. Census and Barnes Reports is forecasting 3.0 percent for 2021 and 2022.

Interest rates have been at the lowest rates in decades with the COVID virus. Barnes Reports is forecasting that the interest rates will remain at these low rates until either the housing market sales reach 2008 highs or inflation from stimulus spending raises gas, energy and/or food prices to 2019 levels.

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Labor Issues

The U.S. labor market is recovering from the COVID virus, but the labor participation rate remains low as working age citizens are 1) staying home due to COVID fears and 2) retiring early. Barnes Reports is forecasting a stubborn low participation rate and a drag from more restrictive northern states. The retail and hospitality and transportation sectors will have even lower participation.

More open states such as Florida, Texas, and other southern and midwestern states will boost the employment rate as those citizens are more willing to balance the risk of the virus with the need to work and keep the economy healthy.

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SUBSECTOR 311: Global Food and beverage manufacturing

NAICS CODE	INDUSTRY TITLE	2022 Sales (\$Mill)	2021-2022 % Change
31111	Animal food manufacturing	339,530,000	0%
31121	Flour milling and malt manufacturing	84,000,000	-5%
31122	Starch and vegetable fats and oils manufacturing	338,890,000	-2%
31123	Breakfast cereal manufacturing	71,460,000	3%
31131	Sugar manufacturing	84,840,000	6%
31134	Nonchocolate confectionery manufacturing	90,510,000	9%
31135	Chocolate and chocolate confectionery manufacturing	106,460,000	0%
31141	Frozen food manufacturing	231,200,000	2%
31142	Fruit and vegetable canning, pickling, and drying	237,690,000	-1%
31151	Dairy product (except frozen) manufacturing	750,440,000	2%
31152	Ice cream and frozen dessert manufacturing	52,990,000	2%
31161	Animal slaughtering and processing	1,397,980,000	1%
31171	Seafood product preparation and packaging	88,020,000	1%
31181	Bread and bakery product manufacturing	287,200,000	2%
31182	Cookie, cracker, and pasta manufacturing	120,750,000	-3%
31183	Tortilla manufacturing	27,640,000	2%
31191	Snack food manufacturing	285,280,000	3%
31192	Coffee and tea manufacturing	68,550,000	-4%
31193	Flavoring syrup and concentrate manufacturing	92,530,000	6%
31194	Seasoning and dressing manufacturing	169,920,000	5%
31199	All other food manufacturing	229,310,000	5%

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SUBSECTOR 311: Global Food and beverage manufacturing (continued)

NAICS CODE	INDUSTRY TITLE	2022 Sales (\$Mill)	2021-2022 % Change
31211	Soft drink and ice manufacturing	229,610,000	-4%
31212	Breweries	188,780,000	0%
31213	Wineries	104,170,000	-5%
31214	Distilleries	95,360,000	4%
31223	Tobacco manufacturing	355,710,000	6%
TOTAL		6,128,820,000	1%

The food and beverage manufacturing subsector globally is projected to be \$6.1 trillion in 2022, growing by 1 percent from 2021 to 2022.

The nonchocolate confectionary industry is forecast to have the highest growth rate globally from 2021 to 2022 in the subsector (9 percent) followed by the tobacco manufacturing industry (6 percent).

The largest global industries in this subsector are the animal slaughtering and processing industry (\$1.4 trillion for 2022) and the dairy product manufacturing industry (\$750 billion).

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SUBSECTOR 325: Global Chemical manufacturing

NAICS CODE	INDUSTRY TITLE	2022 Sales (\$Mill)	2021-2022 % Change
32511	Petrochemical manufacturing	435,400,000	7%
32512	Industrial gas manufacturing	84,030,000	14%
32513	Synthetic dye and pigment manufacturing	34,250,000	-1%
32518	Other basic inorganic chemical manufacturing	230,480,000	6%
32519	Other basic organic chemical manufacturing	707,230,000	1%
32521	Resin and synthetic rubber manufacturing	746,410,000	7%
32522	Artificial and synthetic fibers and filaments manufacturing	33,960,000	-2%
32531	Fertilizer manufacturing	92,570,000	-2%
32532	Pesticide and other agricultural chemical manufacturing	89,850,000	1%
32541	Pharmaceutical and medicine manufacturing	1,391,060,000	2%
32551	Paint and coating manufacturing	161,540,000	1%
32552	Adhesive manufacturing	124,550,000	10%
32561	Soap and cleaning compound manufacturing	231,320,000	1%
32562	Toilet preparation manufacturing	264,090,000	0%
32591	Printing ink manufacturing	28,180,000	3%
32592	Explosives manufacturing	21,450,000	10%
32599	All other chemical product and preparation manufacturing	281,910,000	4%
TOTAL		4,958,280,000	3%

The chemical manufacturing subsector globally is projected to be \$4.9 billion in 2022, growing by 3 percent from 2021 to 2022.

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SUBSECTOR 325: Global Chemical manufacturing (continued)

The industrial gas manufacturing industry is forecast to have the highest growth rate globally from 2021 to 2022 in the subsector (14 percent) followed by the explosives manufacturing industry (10 percent).

The largest global industries in this subsector are the pharmaceutical and medicine manufacturing industry (\$1.4 trillion for 2022) and the resin and synthetic rubber manufacturing industry (\$740 billion).

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SUBSECTOR 326: Global Plastics and rubber products manufacturing

NAICS CODE	INDUSTRY TITLE	2022 Sales (\$Mill)	2021-2022 % Change
32611	Plastics packaging materials and unlaminated film and sheet manufacturing	245,920,000	1%
32612	Plastics pipe, pipe fitting, and unlaminated profile shape manufacturing	143,870,000	6%
32613	Laminated plastics plate, sheet (except packaging), and shape manufacturing	29,970,000	6%
32614	Polystyrene foam product manufacturing	67,060,000	6%
32615	Urethane and other foam product (except polystyrene) manufacturing	75,860,000	4%
32616	Plastics bottle manufacturing	70,370,000	1%
32619	Other plastics product manufacturing	683,220,000	3%
32621	Tire manufacturing	145,150,000	5%
32622	Rubber and plastics hoses and belting manufacturing	36,310,000	3%
32629	Other rubber product manufacturing	115,650,000	2%
TOTAL		1,613,380,000	3%

The plastics and rubber products manufacturing subsector globally is projected to be \$1.6 trillion in 2022, growing by 3 percent from 2021 to 2022.

The plastics pipe, pipe fitting, and unlaminated profile shape mfg. industry is forecast to have the highest growth rate globally from 2021 to 2022 in the subsector (6 percent) followed by the laminated plastics plate, sheet (except packaging), and shape mfg. industry (6 percent).

The largest global industries in this subsector are the other plastics product manufacturing industry (\$683 billion for 2022) and the plastics packaging materials and unlaminated film and sheet manufacturing industry (\$245 billion).

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SUBSECTOR 332: Global Fabricated Metal Product manufacturing

NAICS CODE	INDUSTRY TITLE	2022 Sales (\$Mill)	2021-2022 % Change
33211	Forging and stamping	212,050,000	2%
33221	Cutlery and handtool manufacturing	57,150,000	0%
33231	Plate work and fabricated structural product manufacturing	355,980,000	7%
33232	Ornamental and architectural metal products manufacturing	320,470,000	6%
33241	Power boiler and heat exchanger manufacturing	51,870,000	4%
33242	Metal tank (heavy gauge) manufacturing	55,800,000	3%
33243	Metal can, box, and other metal container (light gauge) manufacturing	120,430,000	3%
33251	Hardware manufacturing	59,860,000	4%
33261	Spring and wire product manufacturing	66,870,000	4%
33271	Machine shops	261,670,000	4%
33272	Turned product and screw, nut, and bolt manufacturing	217,080,000	6%
33281	Coating, engraving, heat treating, and allied activities	172,640,000	2%
33291	Metal valve manufacturing	228,660,000	4%
33299	All other fabricated metal product manufacturing	246,090,000	1%
TOTAL		2,426,620,000	4%

The fabricated metal product manufacturing subsector globally is projected to be \$2.4 trillion in 2021, growing by 4 percent from 2021 to 2022.

The plate work and fabricated structural product manufacturing industry is forecast to have the highest growth rate globally from 2021 to 2022 in the subsector (7 percent) followed by the spring and wire product manufacturing industry (4 percent).

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Equipment Type: Inkjet inks

SUBSECTOR 332: Global Fabricated Metal Product manufacturing (continued)

The largest global industries in this subsector are the plate work and fabricated structural product manufacturing industry (\$355 billion for 2022) and the ornamental and architectural metal products manufacturing industry (\$320 billion).

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SUBSECTOR 333: Global Machinery manufacturing

NAICS CODE	INDUSTRY TITLE	2022 Sales (\$Mill)	2021-2022 % Change
333111	Farm machinery and equipment manufacturing	125,830,000	-3%
333112	Lawn and garden tractor and home lawn and garden equipment manufacturing	45,480,000	-1%
333120	Construction machinery manufacturing	222,690,000	4%
333131	Mining machinery and equipment manufacturing	20,540,000	-1%
333132	Oil and gas field machinery and equipment manufacturing	63,340,000	-5%
333241	Food product machinery manufacturing	37,380,000	4%
333242	Semiconductor machinery manufacturing	99,570,000	21%
333243	Sawmill, woodworking, and paper machinery manufacturing	24,740,000	4%
333244	Printing machinery and equipment manufacturing	10,740,000	1%
333249	Other industrial machinery manufacturing	100,880,000	3%
333314	Optical instrument and lens manufacturing	30,350,000	2%
333316	Photographic and photocopying equipment manufacturing	6,550,000	-6%
333318	Other commercial and service industry machinery manufacturing	101,270,000	-2%
333413	Industrial and commercial fan and blower and air purification equipment manufacturing	36,690,000	1%

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SUBSECTOR 333: Global Machinery manufacturing (continued)

NAICS CODE	INDUSTRY TITLE	2022 Sales (\$Mill)	2021-2022 % Change
333414	Heating equipment (except warm air furnaces) manufacturing	24,850,000	0%
333415	Air-conditioning and warm air heating equipment and commercial and industrial refrigeration equipment manufacturing	205,200,000	2%
333511	Industrial mold manufacturing	44,500,000	4%
333514	Special die and tool, die set, jig, and fixture manufacturing	72,780,000	7%
333515	Cutting tool and machine tool accessory manufacturing	32,160,000	1%
333517	Machine tool manufacturing	54,590,000	5%
333519	Rolling mill and other metalworking machinery manufacturing	23,950,000	3%
333611	Turbine and turbine generator set units manufacturing	84,130,000	0%
333612	Speed changer, industrial high-speed drive, and gear manufacturing	19,310,000	0%
333613	Mechanical power transmission equipment manufacturing	35,500,000	8%
333618	Other engine equipment manufacturing	169,020,000	3%
333912	Air and gas compressor manufacturing	51,690,000	-1%
333913	Measuring and dispensing pump manufacturing	160,710,000	10%
333921	Elevator and moving stairway manufacturing	29,110,000	11%
333922	Conveyor and conveying equipment manufacturing	70,220,000	5%

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SUBSECTOR 333: Global Machinery manufacturing (continued)

NAICS CODE	INDUSTRY TITLE	2022 Sales (\$Mill)	2021-2022 % Change
333923	Overhead traveling crane, hoist, and monorail system manufacturing	49,290,000	2%
333924	Industrial truck, trailer, and stacker machinery manufacturing	77,860,000	8%
333991	Power-driven handtool manufacturing	20,270,000	1%
333992	Welding and soldering equipment manufacturing	27,920,000	-1%
333993	Packaging machinery manufacturing	51,710,000	7%
333994	Industrial process furnace and oven manufacturing	13,900,000	-1%
333995	Fluid power cylinder and actuator manufacturing	52,470,000	4%
333996	Fluid power pump and motor manufacturing	32,730,000	9%
333997	Scale and balance manufacturing	6,920,000	4%
333999	All other miscellaneous general purpose machinery manufacturing	107,440,000	3%
TOTAL		2,444,280,000	3%

The machinery manufacturing subsector globally is projected to be \$2.4 trillion in 2022, growing by 3 percent from 2021 to 2022.

The Elevator and moving stairway manufacturing industry is forecast to have the highest growth rate globally from 2021 to 2022 in the subsector (8 percent) followed by the Packaging machinery manufacturing industry (5 percent).

The largest global industries in this subsector are the air-conditioning and warm air heating equipment and commercial and industrial refrigeration equipment manufacturing industry (\$216 billion for 2022) and the construction machinery manufacturing industry (\$150 billion).

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SUBSECTOR 334: Global Computer and electronic product manufacturing

NAICS CODE	INDUSTRY TITLE	2022 Sales (\$Mill)	2021-2022 % Change
33411	Computer and peripheral manufacturing	136,360,000	2%
33421	Telephone apparatus manufacturing	21,090,000	-5%
33422	Radio and television broadcasting equipment manufacturing	153,420,000	1%
33429	Other communications equipment manufacturing	28,440,000	3%
33431	Audio and video equipment manufacturing	18,910,000	2%
33441	Semiconductor manufacturing	718,740,000	6%
334510	Electromedical and electrotherapeutic apparatus manufacturing	286,120,000	11%
334511	Search, detection, navigation, guidance, aeronautical, and nautical system and instrument manufacturing	397,390,000	8%
334512	Automatic environmental control manufacturing for residential, commercial, and appliance use	25,850,000	10%
334513	Instruments and related products manufacturing for measuring, displaying, and controlling industrial process variables	71,680,000	3%
334514	Totalizing fluid meter and counting device manufacturing	35,050,000	2%
334515	Instrument manufacturing for measuring and testing electricity and electrical systems	93,550,000	7%
334516	Analytical laboratory instrument manufacturing	114,530,000	2%
334517	Irradiation apparatus manufacturing	60,210,000	2%
334519	Other measuring and controlling device manufacturing	106,870,000	10%
TOTAL		2,268,210,000	6%

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SUBSECTOR 334: Global Computer and electronic product manufacturing (continued)

The computer and electronic product manufacturing subsector globally is projected to be \$2.2 trillion in 2022, growing by 6 percent from 2021 to 2022.

The electromedical apparatus manufacturing industry is forecast to have the highest growth rate globally from 2021 to 2022 in the subsector (11 percent) followed by the automatic environmental control manufacturing industry (10 percent).

The largest global industries in this subsector are the semiconductor manufacturing industry (\$718 billion for 2022) and the search, detection, navigation, guidance, aeronautical, and nautical system and instrument manufacturing industry (\$397 billion).

Executive Summary

Equipment Type: Inkjet inks

SUBSECTOR 335: Global Electrical equipment, appliance, and component manufacturing

NAICS CODE	INDUSTRY TITLE	2022 Sales (\$Mill)	2021-2022 % Change
33511	Electric lamp bulb and part manufacturing	20,290,000	11%
33512	Lighting fixture manufacturing	80,540,000	4%
33521	Small electrical appliance manufacturing	24,820,000	3%
33522	Major appliance manufacturing	138,790,000	5%
33531	Electrical equipment manufacturing	291,800,000	6%
33591	Battery manufacturing	62,180,000	2%
33592	Communication and energy wire and cable manufacturing	58,190,000	-2%
33593	Wiring device manufacturing	101,350,000	4%
33599	All other electrical equipment and component manufacturing	102,780,000	4%
TOTAL		880,740,000	5%

The electrical equipment, appliance, and component manufacturing subsector globally is projected to be \$880 billion in 2021, growing by 5 percent from 2021 to 2022.

The electric lamp manufacturing industry is forecast to have the highest growth rate globally from 2021 to 2022 in the subsector (11 percent) followed by the small electrical equipment manufacturing industry (6 percent).

The largest global industries in this subsector are the electrical equipment manufacturing industry (\$291 billion for 2021) and the major appliance manufacturing industry (\$138 billion).

Executive Summary

Equipment Type: Inkjet inks

SUBSECTOR 336: Global Transportation equipment manufacturing

NAICS CODE	INDUSTRY TITLE	2022 Sales (\$Mill)	2021-2022 % Change
336111	Automobile manufacturing	708,540,000	2%
336112	Light truck and utility vehicle manufacturing	1,556,840,000	8%
33612	Heavy duty truck manufacturing	159,140,000	-1%
33621	Motor vehicle body and trailer manufacturing	388,110,000	9%
33631	Motor vehicle gasoline engine and engine parts manufacturing	271,830,000	7%
33632	Motor vehicle electrical and electronic equipment manufacturing	167,480,000	3%
33633	Motor vehicle steering and suspension components (except spring) manufacturing	109,940,000	4%
33634	Motor vehicle brake system manufacturing	83,770,000	6%
33635	Motor vehicle transmission and power train parts manufacturing	275,020,000	5%
33636	Motor vehicle seating and interior trim manufacturing	177,800,000	0%
33637	Motor vehicle metal stamping	243,790,000	3%
33639	Other motor vehicle parts manufacturing	359,560,000	-1%
336411	Aircraft manufacturing	1,208,240,000	9%
336412	Aircraft engine and engine parts manufacturing	301,560,000	7%
336413	Other aircraft parts and auxiliary equipment manufacturing	193,930,000	-1%
336414	Guided missile and space vehicle manufacturing	115,940,000	3%

Executive Summary

Equipment Type: Inkjet inks

SUBSECTOR 336: Global Transportation equipment manufacturing (continued)

NAICS CODE	INDUSTRY TITLE	2022 Sales (\$Mill)	2021-2022 % Change
336415	Guided missile and space vehicle propulsion unit and propulsion unit parts manufacturing	108,290,000	10%
336419	Other guided missile and space vehicle parts and auxiliary equipment manufacturing	8,260,000	2%
33651	Railroad rolling stock manufacturing	54,840,000	-8%
33661	Ship and boat building	242,310,000	4%
33699	Other transportation equipment manufacturing	178,960,000	10%
TOTAL		6,914,150,000	6%

The transportation equipment manufacturing subsector globally is projected to be \$6.9 trillion in 2022, growing by 6 percent from 2021 to 2022.

The guided missile propulsion manufacturing industry is forecast to have the highest growth rate globally from 2021 to 2022 in the subsector (10 percent) followed by the aircraft manufacturing industry (9 percent).

The largest global industries in this subsector are the light truck and utility vehicle manufacturing industry (\$1.5 trillion for 2022) and the aircraft manufacturing industry (\$1.2 trillion).

Executive Summary

Equipment Type: Inkjet inks

SUBSECTOR 339: Global Miscellaneous manufacturing

NAICS CODE	INDUSTRY TITLE	2022 Sales (\$Mill)	2021-2022 % Change
33911	Medical equipment and supplies manufacturing	573,560,000	2%
33991	Jewelry and silverware manufacturing	43,660,000	1%
33992	Sporting and athletic goods manufacturing	62,640,000	1%
33993	Doll, toy, and game manufacturing	11,340,000	6%
33994	Office supplies (except paper) manufacturing	16,830,000	-1%
33995	Sign manufacturing	73,630,000	0%
33999	All other miscellaneous manufacturing	155,970,000	0%
TOTAL		937,630,000	1%

The miscellaneous manufacturing subsector globally is projected to be \$0.9 trillion in 2022, growing by 1 percent from 2021 to 2022.

The doll, toy and game manufacturing industry is forecast to have the highest growth rate globally from 2021 to 2022 in the subsector (6 percent) followed by the medical supplies manufacturing industry (2 percent).

The largest global industries in this subsector are the medical equipment and supplies manufacturing industry (\$573 billion for 2022) and the sign manufacturing industry (\$73 billion).

Global Markets

Equipment Type: Inkjet inks

Country Name	2016	2017	2018	2019	2020	2021	2022	2023
Argentina	81.9	66.4	54.8	56.0	51.7	48.6	45.3	41.8
Australia	75.4	61.9	68.8	76.1	78.2	84.4	89.9	94.5
Austria	59.3	56.7	64.1	71.4	76.4	84.7	93.2	101.3
Bangladesh	29.8	34.7	40.9	55.3	66.2	83.7	105.0	130.0
Belgium	55.4	50.5	55.5	62.6	65.0	70.8	76.6	81.7
Brazil	180.2	174.7	153.3	184.0	184.7	196.7	206.5	214.1
Canada	163.6	163.0	175.5	206.9	231.9	267.9	305.2	343.4
Chile	24.8	23.3	26.1	27.4	30.1	33.3	36.4	39.2
China	2,771.9	2,897.9	3,215.6	3,693.5	4,185.3	4,826.8	5,529.8	6,252.4
Czech Republic	43.1	41.7	47.0	55.2	60.5	68.9	78.1	87.2
Denmark	39.4	34.0	38.4	46.0	47.7	52.9	58.3	63.4
Egypt, Arab Rep.	48.4	31.1	33.8	46.6	45.8	50.1	54.4	58.2
Finland	33.5	31.1	33.7	37.4	38.9	42.2	45.4	48.3
France	236.2	208.4	229.2	263.8	279.7	311.1	341.3	369.8
Germany	659.5	605.5	669.9	728.6	801.6	895.7	987.0	1,074.0
Hungary	24.7	22.2	24.5	27.9	30.2	34.0	37.6	41.1
India	294.3	316.9	328.9	369.6	412.0	464.2	519.6	574.0
Indonesia	156.2	164.5	172.1	213.0	241.3	283.9	329.5	377.6
Ireland	86.0	85.4	103.0	123.4	135.8	157.9	182.3	207.8
Israel	33.2	34.3	36.8	41.4	45.9	51.7	57.8	63.9
Italy	255.2	235.6	260.1	288.3	317.5	357.0	395.9	433.5
Japan	795.0	810.4	854.5	1,010.0	1,144.4	1,231.3	1,378.1	1,522.2
Korea, Rep.	346.0	359.7	381.1	402.8	462.6	523.5	584.2	643.8
Malaysia	56.3	56.0	64.3	75.5	86.9	102.6	119.5	137.4
Mexico	187.8	160.5	175.8	212.4	223.5	250.8	277.5	303.2
Netherlands	78.5	74.0	84.4	94.7	102.9	115.2	128.2	140.8
Nigeria	36.0	26.4	31.9	49.9	49.7	58.0	67.2	76.9
Norway	25.1	20.5	21.3	24.7	25.8	28.9	31.7	34.4
Pakistan	29.5	29.4	31.9	33.5	36.6	40.4	44.0	47.2
Philippines	49.1	51.3	55.1	67.4	77.4	91.7	107.2	123.8
Poland	83.1	74.4	81.9	95.8	100.4	111.0	121.9	132.1
Puerto Rico	41.6	40.2	39.8	47.9	51.0	56.9	62.7	68.2
Romania	32.5	33.9	37.6	41.2	48.7	56.9	65.6	74.6
Russian Federation	159.8	154.5	180.8	211.8	229.6	261.6	296.0	330.6
Saudi Arabia	71.5	71.3	83.7	96.1	114.8	137.6	162.6	189.8
Singapore	49.7	51.8	64.3	70.4	86.4	104.6	124.8	147.2
South Africa	36.1	33.7	36.0	40.0	43.3	48.1	52.6	56.9
Spain	145.0	120.4	132.6	147.4	154.1	170.6	187.3	202.5
Sweden	64.9	57.0	60.2	66.0	68.8	74.4	79.2	83.4

Global Markets

Equipment Type: Inkjet inks

Country Name	2016	2017	2018	2019	2020	2021	2022	2023
Switzerland	106.3	99.9	106.7	128.8	139.3	158.5	177.9	197.2
Thailand	93.3	100.1	112.6	134.7	154.4	181.9	212.8	245.8
Turkey	138.1	120.5	122.1	134.5	144.5	154.9	165.1	173.6
United Arab Emirates	28.9	28.1	30.7	35.5	40.7	47.4	54.3	61.6
United Kingdom	248.9	192.3	210.2	237.4	254.3	275.7	297.1	316.0
United States	1,718.7	1,745.9	1,903.3	2,262.3	2,486.6	2,860.2	3,244.5	3,634.5
Venezuela, RB	47.9	42.9	42.2	46.6	47.3	46.3	47.3	47.6
Vietnam	26.1	27.6	32.6	41.7	48.2	58.6	70.8	84.3
GLOBAL	10,047.9	9,922.8	10,809.5	12,483.6	13,848.3	15,713.8	17,735.2	19,772.8

Source: Barnes Reports

*2021-2023 Forecasts

Regional Markets

Equipment Type: Inkjet inks

The market for this equipment in North America is estimated to be \$3.8 billion dollars in 2022 and is expected to change by 13.3 percent from 2021 to 2022. The market in the Asia-Pacific region for this equipment is estimated to be \$9.3 billion in 2022 and is forecast to change by 13.9 percent from 2022 to 2023. The European market is \$2.9 billion in 2022.

Market Size by Year (US\$ Millions)

	2016	2017	2018	2019	2020	2021	2022	2023
North America	2,070.1	2,069.5	2,254.6	2,681.6	2,941.9	3,378.8	3,827.2	4,281.1
Latin America	262.1	241.0	208.2	239.9	236.5	245.3	251.9	255.9
Europe	1,961.5	1,767.4	1,957.8	2,203.0	2,389.6	2,669.6	2,949.0	3,217.2
Asia-Pacific	4,876.5	5,054.6	5,530.1	6,358.4	7,195.0	8,196.9	9,335.4	10,496.4
Middle East	138.1	120.5	122.1	134.5	144.5	154.9	165.1	173.6
Africa	72.2	60.1	68.0	89.9	93.0	106.1	119.9	133.9
GLOBAL	9,308.4	9,253.0	10,072.7	11,617.4	12,907.5	14,645.5	16,528.6	18,424.2

Regional Distribution

	2016	2017	2018	2019	2020	2021	2022	2023
North America	22.2%	22.4%	22.4%	23.1%	22.8%	23.1%	23.2%	23.2%
Latin America	2.8%	2.6%	2.1%	2.1%	1.8%	1.7%	1.5%	1.4%
Europe	21.1%	19.1%	19.4%	19.0%	18.5%	18.2%	17.8%	17.5%
Asia-Pacific	52.4%	54.6%	54.9%	54.7%	55.7%	56.0%	56.5%	57.0%
Middle East	1.5%	1.3%	1.2%	1.2%	1.1%	1.1%	1.0%	0.9%
Africa	0.8%	0.7%	0.7%	0.8%	0.7%	0.7%	0.7%	0.7%
GLOBAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Year-to-Year Change

	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
North America	0.0%	8.9%	18.9%	9.7%	14.9%	13.3%	11.9%
Latin America	-8.0%	-13.6%	15.3%	-1.5%	3.7%	2.7%	1.6%
Europe	-9.9%	10.8%	12.5%	8.5%	11.7%	10.5%	9.1%
Asia-Pacific	3.7%	9.4%	15.0%	13.2%	13.9%	13.9%	12.4%
Middle East	-12.7%	1.4%	10.1%	7.5%	7.2%	6.5%	5.2%
Africa	-16.7%	13.0%	32.3%	3.4%	14.1%	13.0%	11.7%
GLOBAL	-0.6%	8.9%	15.3%	11.1%	13.5%	12.9%	11.5%

Source: Barnes Reports

*2020-2021 Forecasts

Argentina

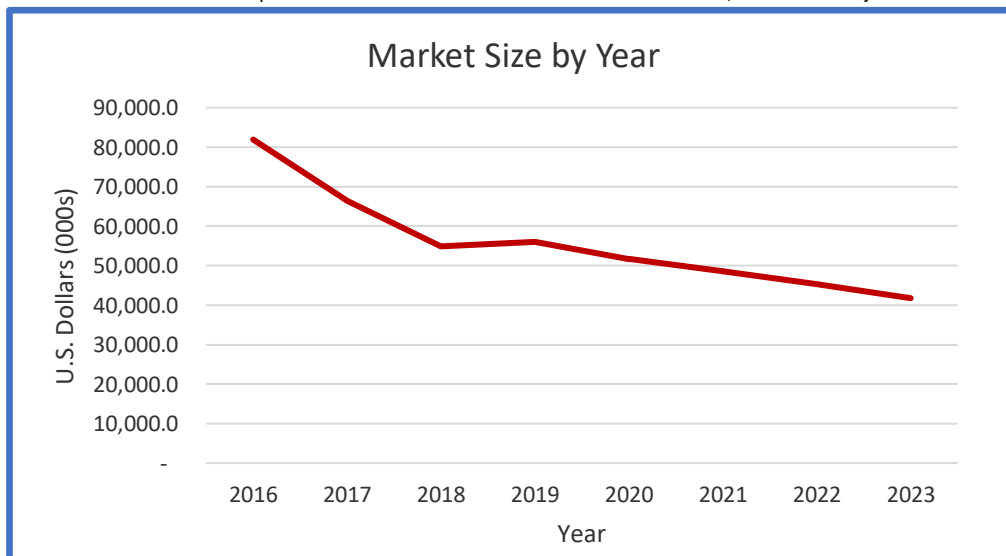
Equipment Type: Inkjet inks

The market for this equipment in Argentina is estimated to be \$45.3 million dollars in 2022 and is expected to change by -7.9 percent from 2022 to 2023. The market will be 5429.3 million Pesos in 2022 and is forecast to change by 30.5 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Pesos
2016	81,932.2	1,097,523.0
2017	66,359.7	1,099,095.7
2018	54,842.9	1,540,810.9
2019	55,953.5	2,694,041.4
2020	51,723.2	3,151,029.9
2021	48,581.3	4,161,368.7
2022	45,335.4	5,429,305.5
2023	41,761.4	6,945,209.0
2028	21,586.8	19,707,427.4
Y-to-Y Change	US Dollars	Pesos
2016-2017	-19.0%	0.1%
2017-2018	-17.4%	40.2%
2018-2019	2.0%	74.8%
2019-2020	-7.6%	17.0%
2020-2021	-6.1%	32.1%
2021-2022	-6.7%	30.5%
2022-2023	-7.9%	27.9%
CAGR 2023-2028	-9.7%	183.8%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Argentina

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Argentina will be \$17.57 million dollars in 2022 and the value added amount for the market will be \$25.09 million dollars. The cost of resales for this equipment is expected to reach \$1.44 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	17,567.75
Cost of resales (\$1,000)	1,436.24
Cost of purchased fuels consumed (\$1,000)	559.91
Cost of purchased electricity (\$1,000)	533.53
Cost of contract work (\$1,000)	241.40
Value of resales (\$1,000)	1,854.94
Value added (\$1,000)	25,093.30

Capital Expenses Estimates

The total capital expenses for this market in Argentina will be \$2.07 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$1.72 million dollars. The expenditures for buildings for this equipment expected to reach \$0.35 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	2,073.68
Capital expenditures for buildings and other structures (\$1,000)	349.13
Capital expenditures for machinery and equipment (\$1,000)	1,724.55
Capital expenditures for automobiles, trucks, etc. (\$1,000)	21.93
Capital expenditures for computers and peripheral equip. (\$1,000)	45.97
Capital expenditures for all other machinery and equip. (\$1,000)	1,656.65

*2021-2022 Forecasts

Source: Barnes Reports

Australia

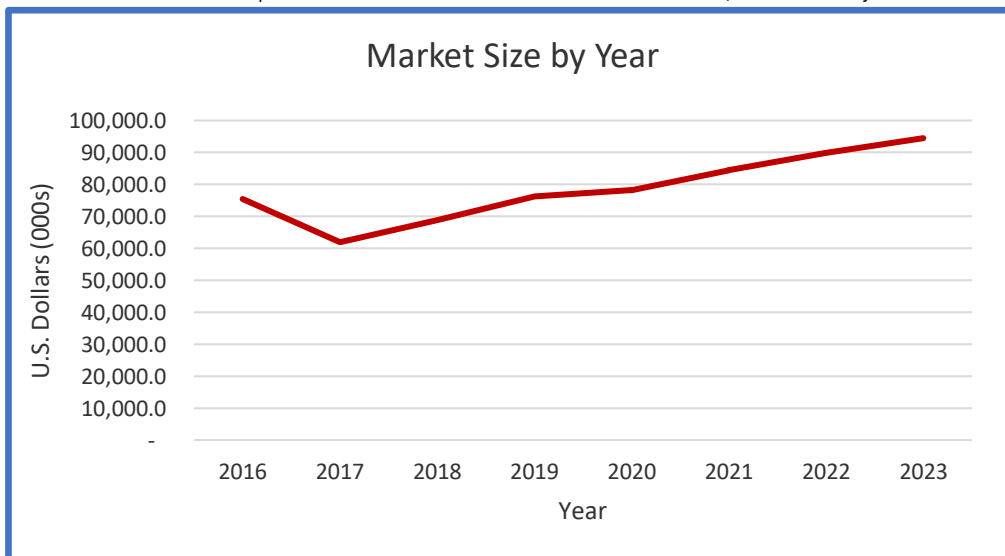
Equipment Type: Inkjet inks

The market for this equipment in Australia is estimated to be \$89.9 million dollars in 2022 and is expected to change by 5.1 percent from 2022 to 2023. The market will be 142.4 million Dollars in 2022 and is forecast to change by 11.3 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Dollars
2016	75,387.0	90,220.3
2017	61,916.7	82,095.3
2018	68,844.9	88,816.8
2019	76,149.8	106,472.7
2020	78,174.1	113,485.5
2021	84,396.4	128,020.9
2022	89,856.5	142,425.0
2023	94,475.3	156,471.4
2028	104,373.6	215,330.7
Y-to-Y Change	US Dollars	Dollars
2016-2017	-17.9%	-9.0%
2017-2018	11.2%	8.2%
2018-2019	10.6%	19.9%
2019-2020	2.7%	6.6%
2020-2021	8.0%	12.8%
2021-2022	6.5%	11.3%
2022-2023	5.1%	9.9%
CAGR 2023-2028	2.1%	37.6%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Australia

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Australia will be \$34.82 million dollars in 2022 and the value added amount for the market will be \$49.74 million dollars. The cost of resales for this equipment is expected to reach \$2.85 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	34,819.92
Cost of resales (\$1,000)	2,846.68
Cost of purchased fuels consumed (\$1,000)	1,109.76
Cost of purchased electricity (\$1,000)	1,057.47
Cost of contract work (\$1,000)	478.46
Value of resales (\$1,000)	3,676.56
Value added (\$1,000)	49,735.81

Capital Expenses Estimates

The total capital expenses for this market in Australia will be \$4.11 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$3.42 million dollars. The expenditures for buildings for this equipment expected to reach \$0.69 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	4,110.11
Capital expenditures for buildings and other structures (\$1,000)	691.99
Capital expenditures for machinery and equipment (\$1,000)	3,418.12
Capital expenditures for automobiles, trucks, etc. (\$1,000)	43.47
Capital expenditures for computers and peripheral equip. (\$1,000)	91.11
Capital expenditures for all other machinery and equip. (\$1,000)	3,283.53

*2021-2022 Forecasts

Source: Barnes Reports

Austria

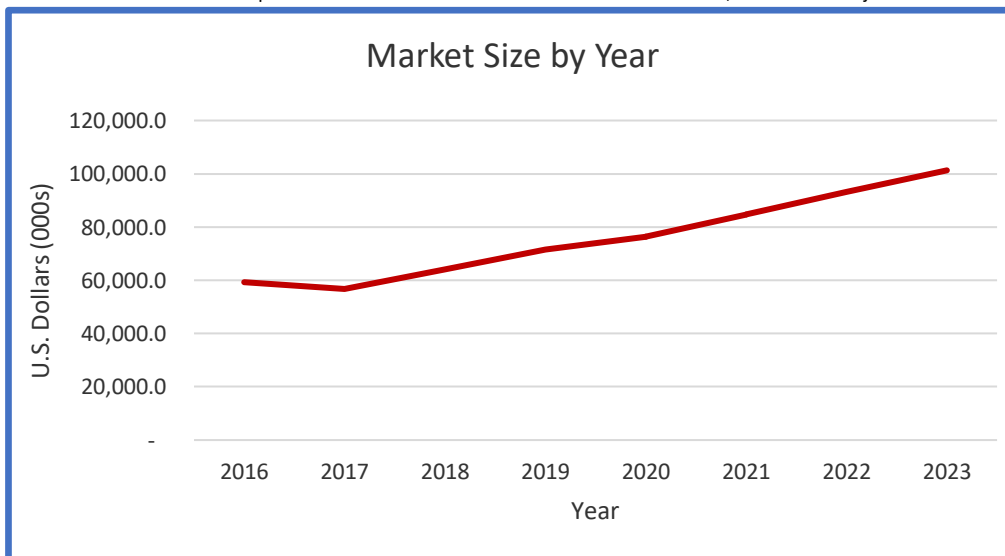
Equipment Type: Inkjet inks

The market for this equipment in Austria is estimated to be \$93.2 million dollars in 2022 and is expected to change by 8.7 percent from 2022 to 2023. The market will be 87.9 million Euros in 2022 and is forecast to change by 11.8 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Euros
2016	59,283.1	53,336.4
2017	56,736.7	50,223.6
2018	64,098.8	54,277.1
2019	71,444.0	63,819.2
2020	76,388.3	69,314.0
2021	84,661.9	78,595.1
2022	93,210.7	87,889.2
2023	101,280.2	97,055.1
2028	139,375.5	137,044.6
Y-to-Y Change	US Dollars	Euros
2016-2017	-4.3%	-5.8%
2017-2018	13.0%	8.1%
2018-2019	11.5%	17.6%
2019-2020	6.9%	8.6%
2020-2021	10.8%	13.4%
2021-2022	10.1%	11.8%
2022-2023	8.7%	10.4%
CAGR 2023-2028	7.5%	41.2%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Austria

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Austria will be \$36.12 million dollars in 2022 and the value added amount for the market will be \$51.59 million dollars. The cost of resales for this equipment is expected to reach \$2.95 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	36,119.70
Cost of resales (\$1,000)	2,952.95
Cost of purchased fuels consumed (\$1,000)	1,151.18
Cost of purchased electricity (\$1,000)	1,096.94
Cost of contract work (\$1,000)	496.33
Value of resales (\$1,000)	3,813.80
Value added (\$1,000)	51,592.40

Capital Expenses Estimates

The total capital expenses for this market in Austria will be \$4.26 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$3.55 million dollars. The expenditures for buildings for this equipment expected to reach \$0.72 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	4,263.53
Capital expenditures for buildings and other structures (\$1,000)	717.82
Capital expenditures for machinery and equipment (\$1,000)	3,545.72
Capital expenditures for automobiles, trucks, etc. (\$1,000)	45.10
Capital expenditures for computers and peripheral equip. (\$1,000)	94.51
Capital expenditures for all other machinery and equip. (\$1,000)	3,406.10

*2021-2022 Forecasts

Source: Barnes Reports

Bangladesh

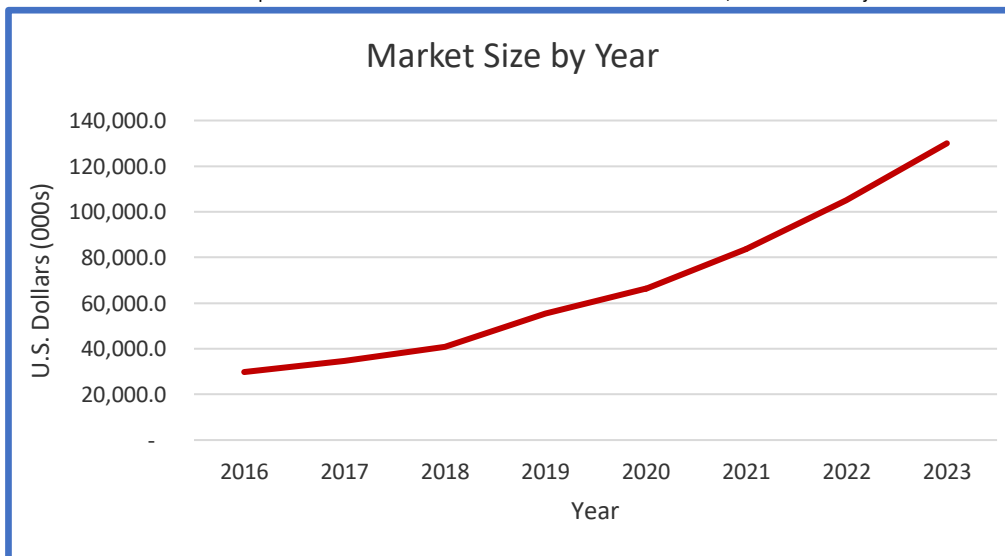
Equipment Type: Inkjet inks

The market for this equipment in Bangladesh is estimated to be \$105.0 million dollars in 2022 and is expected to change by 23.8 percent from 2022 to 2023. The market will be 8518.7 million Takas in 2022 and is forecast to change by 24.9 percent from 2022 to 2023.

Year	Market Sales (000s)	
	US Dollars	Takas
2016	29,802.8	2,575,742.4
2017	34,706.1	2,746,087.2
2018	40,907.5	3,359,426.5
2019	55,337.2	4,650,061.3
2020	66,240.7	5,425,936.9
2021	83,668.3	6,821,267.1
2022	104,981.9	8,518,684.9
2023	130,001.6	10,499,310.2
2028	343,943.3	27,131,238.5
Y-to-Y Change	US Dollars	Takas
2016-2017	16.5%	6.6%
2017-2018	17.9%	22.3%
2018-2019	35.3%	38.4%
2019-2020	19.7%	16.7%
2020-2021	26.3%	25.7%
2021-2022	25.5%	24.9%
2022-2023	23.8%	23.3%
CAGR 2023-2028	32.9%	158.4%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Bangladesh

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Bangladesh will be \$40.68 million dollars in 2022 and the value added amount for the market will be \$58.11 million dollars. The cost of resales for this equipment is expected to reach \$3.33 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	40,681.11
Cost of resales (\$1,000)	3,325.86
Cost of purchased fuels consumed (\$1,000)	1,296.56
Cost of purchased electricity (\$1,000)	1,235.47
Cost of contract work (\$1,000)	559.00
Value of resales (\$1,000)	4,295.43
Value added (\$1,000)	58,107.78

Capital Expenses Estimates

The total capital expenses for this market in Bangladesh will be \$4.80 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$3.99 million dollars. The expenditures for buildings for this equipment expected to reach \$0.81 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	4,801.96
Capital expenditures for buildings and other structures (\$1,000)	808.47
Capital expenditures for machinery and equipment (\$1,000)	3,993.49
Capital expenditures for automobiles, trucks, etc. (\$1,000)	50.79
Capital expenditures for computers and peripheral equip. (\$1,000)	106.45
Capital expenditures for all other machinery and equip. (\$1,000)	3,836.25

*2021-2022 Forecasts

Source: Barnes Reports

Belgium

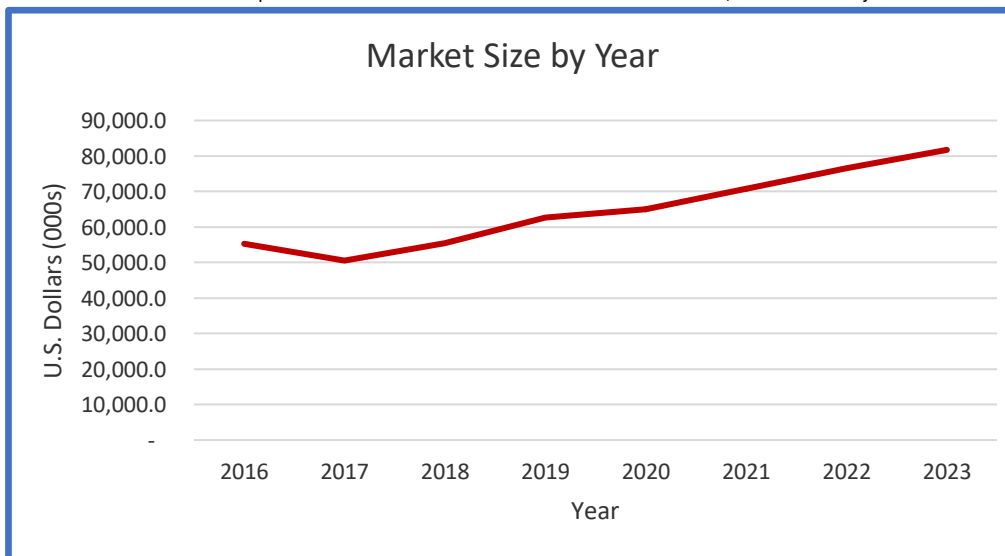
Equipment Type: Inkjet inks

The market for this equipment in Belgium is estimated to be \$76.6 million dollars in 2022 and is expected to change by 6.8 percent from 2022 to 2023. The market will be 71.8 million Euros in 2022 and is forecast to change by 9.7 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Euros
2016	55,363.3	50,061.2
2017	50,543.1	44,782.0
2018	55,459.8	46,961.8
2019	62,645.0	55,959.3
2020	65,004.3	58,836.0
2021	70,780.4	65,438.3
2022	76,559.8	71,777.2
2023	81,727.8	77,747.0
2028	102,939.3	99,677.8
Y-to-Y Change	US Dollars	Euros
2016-2017	-8.7%	-10.5%
2017-2018	9.7%	4.9%
2018-2019	13.0%	19.2%
2019-2020	3.8%	5.1%
2020-2021	8.9%	11.2%
2021-2022	8.2%	9.7%
2022-2023	6.8%	8.3%
CAGR 2023-2028	5.2%	28.2%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Belgium

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Belgium will be \$29.67 million dollars in 2022 and the value added amount for the market will be \$42.38 million dollars. The cost of resales for this equipment is expected to reach \$2.43 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	29,667.39
Cost of resales (\$1,000)	2,425.44
Cost of purchased fuels consumed (\$1,000)	945.54
Cost of purchased electricity (\$1,000)	900.99
Cost of contract work (\$1,000)	407.66
Value of resales (\$1,000)	3,132.52
Value added (\$1,000)	42,376.09

Capital Expenses Estimates

The total capital expenses for this market in Belgium will be \$3.50 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$2.91 million dollars. The expenditures for buildings for this equipment expected to reach \$0.59 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	3,501.91
Capital expenditures for buildings and other structures (\$1,000)	589.59
Capital expenditures for machinery and equipment (\$1,000)	2,912.32
Capital expenditures for automobiles, trucks, etc. (\$1,000)	37.04
Capital expenditures for computers and peripheral equip. (\$1,000)	77.63
Capital expenditures for all other machinery and equip. (\$1,000)	2,797.65

*2021-2022 Forecasts

Source: Barnes Reports

Brazil

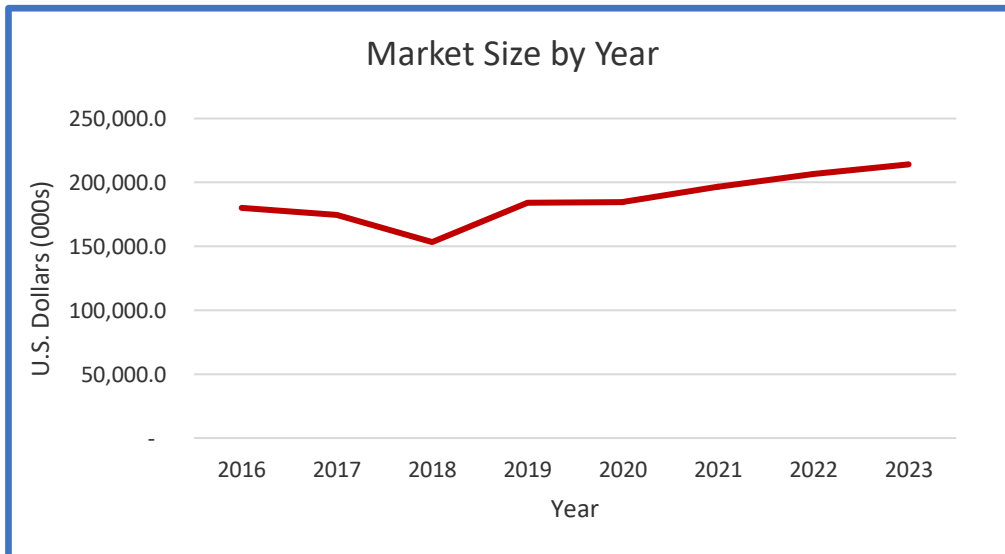
Equipment Type: Inkjet inks

The market for this equipment in Brazil is estimated to be \$206.5 million dollars in 2022 and is expected to change by 3.7 percent from 2022 to 2023. The market will be 955.3 million Reals in 2022 and is forecast to change by 11.5 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Reals
2016	180,173.4	609,090.0
2017	174,655.8	554,900.7
2018	153,320.1	560,201.1
2019	183,959.6	725,628.5
2020	184,700.5	757,420.6
2021	196,654.7	856,534.7
2022	206,493.1	955,251.2
2023	214,116.4	1,052,043.3
2028	220,698.6	1,465,687.1
Y-to-Y Change	US Dollars	Reals
2016-2017	-3.1%	-8.9%
2017-2018	-12.2%	1.0%
2018-2019	20.0%	29.5%
2019-2020	0.4%	4.4%
2020-2021	6.5%	13.1%
2021-2022	5.0%	11.5%
2022-2023	3.7%	10.1%
CAGR 2023-2028	0.6%	39.3%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Brazil

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Brazil will be \$80.02 million dollars in 2022 and the value added amount for the market will be \$114.29 million dollars. The cost of resales for this equipment is expected to reach \$6.54 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	80,017.28
Cost of resales (\$1,000)	6,541.77
Cost of purchased fuels consumed (\$1,000)	2,550.26
Cost of purchased electricity (\$1,000)	2,430.09
Cost of contract work (\$1,000)	1,099.53
Value of resales (\$1,000)	8,448.85
Value added (\$1,000)	114,294.49

Capital Expenses Estimates

The total capital expenses for this market in Brazil will be \$9.45 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$7.85 million dollars. The expenditures for buildings for this equipment expected to reach \$1.59 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	9,445.16
Capital expenditures for buildings and other structures (\$1,000)	1,590.21
Capital expenditures for machinery and equipment (\$1,000)	7,854.95
Capital expenditures for automobiles, trucks, etc. (\$1,000)	99.91
Capital expenditures for computers and peripheral equip. (\$1,000)	209.38
Capital expenditures for all other machinery and equip. (\$1,000)	7,545.67

*2021-2022 Forecasts

Source: Barnes Reports

Canada

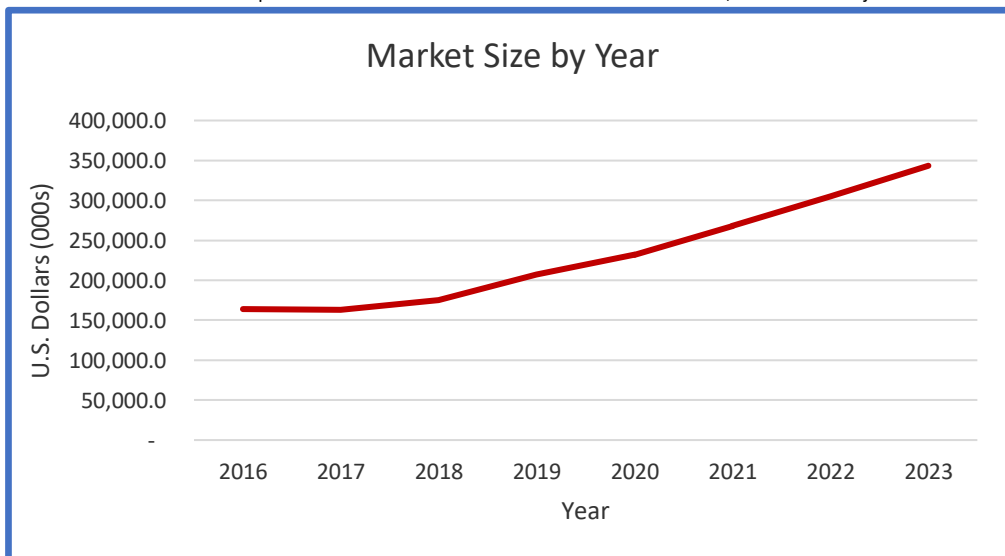
Equipment Type: Inkjet inks

The market for this equipment in Canada is estimated to be \$305.2 million dollars in 2022 and is expected to change by 12.5 percent from 2022 to 2023. The market will be 420 million Dollars in 2022 and is forecast to change by 15.4 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Dollars
2016	163,582.8	207,721.5
2017	163,019.1	211,202.2
2018	175,466.1	227,361.1
2019	206,925.0	274,546.7
2020	231,851.8	310,744.3
2021	267,856.8	363,763.9
2022	305,182.5	419,953.0
2023	343,368.3	478,768.2
2028	532,340.9	792,821.7
Y-to-Y Change	US Dollars	Dollars
2016-2017	-0.3%	1.7%
2017-2018	7.6%	7.7%
2018-2019	17.9%	20.8%
2019-2020	12.0%	13.2%
2020-2021	15.5%	17.1%
2021-2022	13.9%	15.4%
2022-2023	12.5%	14.0%
CAGR 2023-2028	11.0%	65.6%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Canada

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Canada will be \$118.26 million dollars in 2022 and the value added amount for the market will be \$168.92 million dollars. The cost of resales for this equipment is expected to reach \$9.67 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	118,260.04
Cost of resales (\$1,000)	9,668.29
Cost of purchased fuels consumed (\$1,000)	3,769.11
Cost of purchased electricity (\$1,000)	3,591.51
Cost of contract work (\$1,000)	1,625.03
Value of resales (\$1,000)	12,486.83
Value added (\$1,000)	168,919.40

Capital Expenses Estimates

The total capital expenses for this market in Canada will be \$13.96 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$11.61 million dollars. The expenditures for buildings for this equipment expected to reach \$2.35 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	13,959.30
Capital expenditures for buildings and other structures (\$1,000)	2,350.22
Capital expenditures for machinery and equipment (\$1,000)	11,609.08
Capital expenditures for automobiles, trucks, etc. (\$1,000)	147.65
Capital expenditures for computers and peripheral equip. (\$1,000)	309.45
Capital expenditures for all other machinery and equip. (\$1,000)	11,151.98

*2021-2022 Forecasts

Source: Barnes Reports

Chile

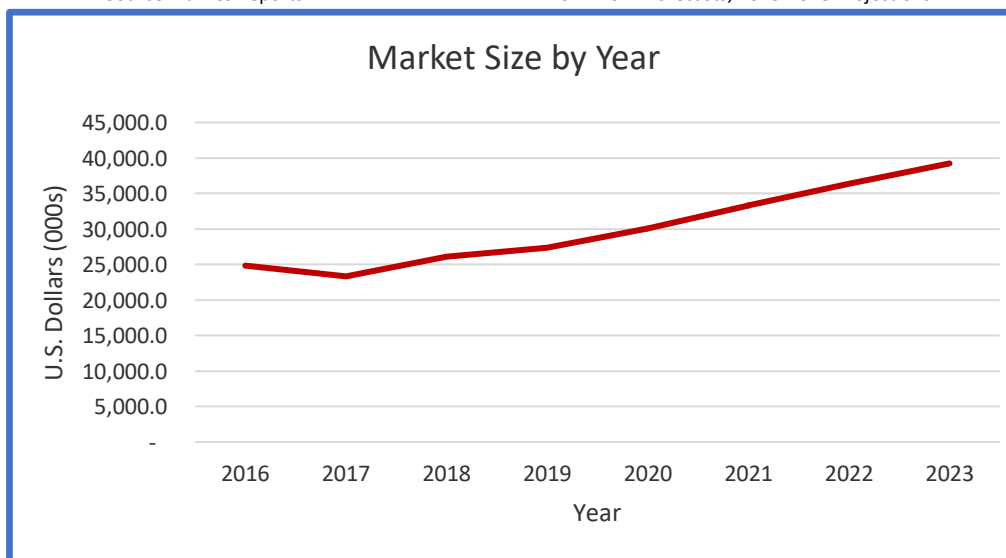
Equipment Type: Inkjet inks

The market for this equipment in Chile is estimated to be \$36.4 million dollars in 2022 and is expected to change by 7.9 percent from 2022 to 2023. The market will be 25635.4 million Pesos in 2022 and is forecast to change by 10.6 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Pesos
2016	24,828.5	16,657,343.2
2017	23,335.8	15,179,385.8
2018	26,101.7	16,738,429.5
2019	27,366.5	19,235,834.4
2020	30,070.9	20,664,905.1
2021	33,305.4	23,176,845.8
2022	36,378.8	25,635,398.3
2023	39,239.6	28,000,719.8
2028	49,264.7	37,431,938.4
Y-to-Y Change	US Dollars	Pesos
2016-2017	-6.0%	-8.9%
2017-2018	11.9%	10.3%
2018-2019	4.8%	14.9%
2019-2020	9.9%	7.4%
2020-2021	10.8%	12.2%
2021-2022	9.2%	10.6%
2022-2023	7.9%	9.2%
CAGR 2023-2028	5.1%	33.7%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Chile

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Chile will be \$14.10 million dollars in 2022 and the value added amount for the market will be \$20.14 million dollars. The cost of resales for this equipment is expected to reach \$1.15 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	14,096.99
Cost of resales (\$1,000)	1,152.49
Cost of purchased fuels consumed (\$1,000)	449.29
Cost of purchased electricity (\$1,000)	428.12
Cost of contract work (\$1,000)	193.71
Value of resales (\$1,000)	1,488.47
Value added (\$1,000)	20,135.75

Capital Expenses Estimates

The total capital expenses for this market in Chile will be \$1.66 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$1.38 million dollars. The expenditures for buildings for this equipment expected to reach \$0.28 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	1,663.99
Capital expenditures for buildings and other structures (\$1,000)	280.15
Capital expenditures for machinery and equipment (\$1,000)	1,383.84
Capital expenditures for automobiles, trucks, etc. (\$1,000)	17.60
Capital expenditures for computers and peripheral equip. (\$1,000)	36.89
Capital expenditures for all other machinery and equip. (\$1,000)	1,329.35

*2021-2022 Forecasts

Source: Barnes Reports

China

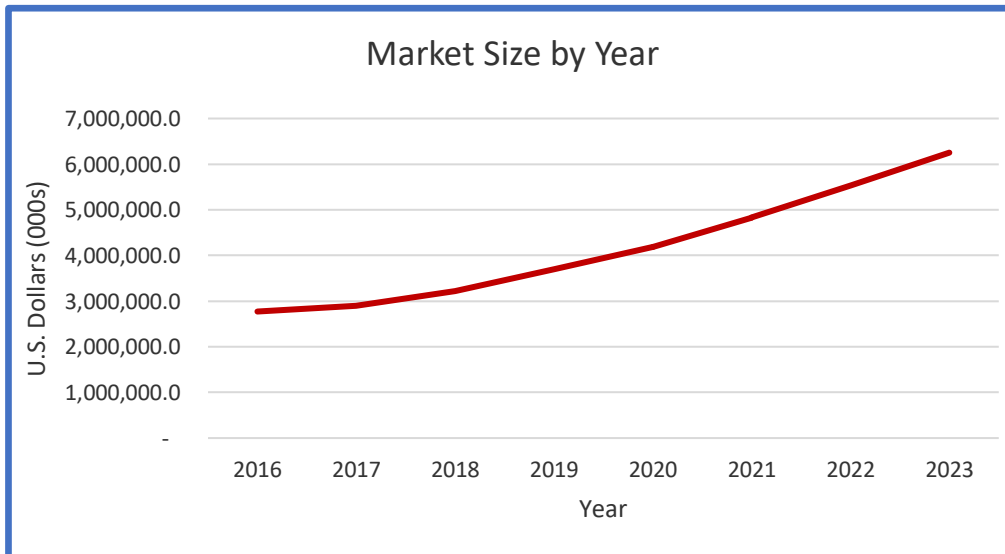
Equipment Type: Inkjet inks

The market for this equipment in China is estimated to be \$5,529.8 million dollars in 2022 and is expected to change by 13.1 percent from 2022 to 2023. The market will be 39624.4 million Yuans in 2022 and is forecast to change by 16.4 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Yuans
2016	2,771,896.5	18,137,488.1
2017	2,897,943.7	19,321,046.6
2018	3,215,634.0	21,274,634.3
2019	3,693,524.1	25,516,342.1
2020	4,185,252.4	29,073,466.6
2021	4,826,779.6	34,054,249.3
2022	5,529,813.2	39,624,426.6
2023	6,252,362.8	45,502,513.2
2028	10,497,369.8	82,559,135.3
Y-to-Y Change	US Dollars	Yuans
2016-2017	4.5%	6.5%
2017-2018	11.0%	10.1%
2018-2019	14.9%	19.9%
2019-2020	13.3%	13.9%
2020-2021	15.3%	17.1%
2021-2022	14.6%	16.4%
2022-2023	13.1%	14.8%
CAGR 2023-2028	13.6%	81.4%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



China

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in China will be \$2,142.84 million dollars in 2022 and the value added amount for the market will be \$3,060.77 million dollars. The cost of resales for this equipment is expected to reach \$175.19 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	2,142,835.33
Cost of resales (\$1,000)	175,186.40
Cost of purchased fuels consumed (\$1,000)	68,295.03
Cost of purchased electricity (\$1,000)	65,077.06
Cost of contract work (\$1,000)	29,444.97
Value of resales (\$1,000)	226,257.40
Value added (\$1,000)	3,060,767.21

Capital Expenses Estimates

The total capital expenses for this market in China will be \$252.94 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$210.35 million dollars. The expenditures for buildings for this equipment expected to reach \$42.59 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	252,938.11
Capital expenditures for buildings and other structures (\$1,000)	42,585.20
Capital expenditures for machinery and equipment (\$1,000)	210,352.91
Capital expenditures for automobiles, trucks, etc. (\$1,000)	2,675.43
Capital expenditures for computers and peripheral equip. (\$1,000)	5,607.15
Capital expenditures for all other machinery and equip. (\$1,000)	202,070.33

*2021-2022 Forecasts

Source: Barnes Reports

Czech Republic

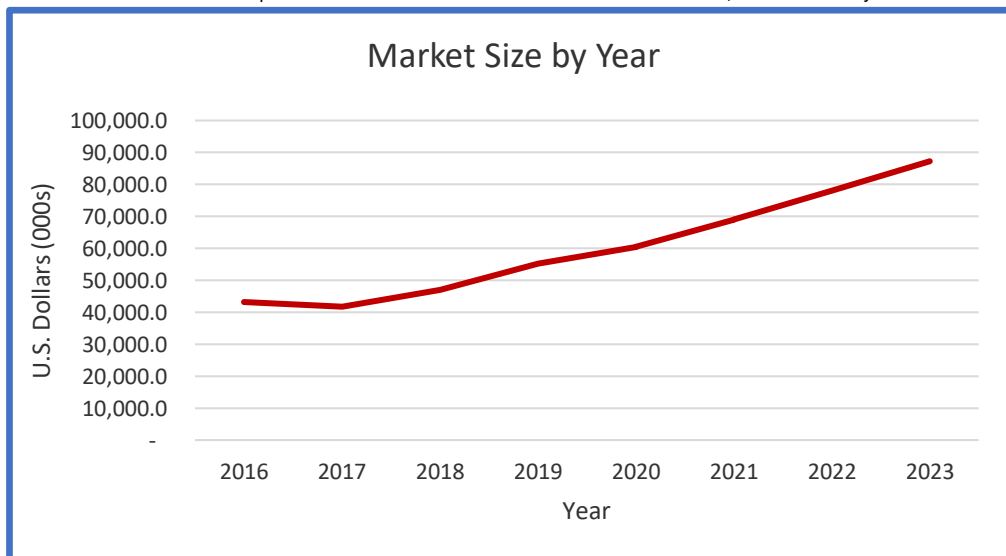
Equipment Type: Inkjet inks

The market for this equipment in Czech Republic is estimated to be \$78.1 million dollars in 2022 and is expected to change by 11.8 percent from 2022 to 2023. The market will be 1732.8 million Korunas in 2022 and is forecast to change by 12.2 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Korunas
2016	43,145.6	1,072,492.8
2017	41,736.2	975,639.4
2018	47,004.4	1,021,402.3
2019	55,178.6	1,265,369.0
2020	60,486.2	1,357,920.0
2021	68,946.6	1,544,646.2
2022	78,070.3	1,732,800.8
2023	87,244.9	1,919,604.1
2028	138,158.8	2,753,938.7
Y-to-Y Change	US Dollars	Korunas
2016-2017	-3.3%	-9.0%
2017-2018	12.6%	4.7%
2018-2019	17.4%	23.9%
2019-2020	9.6%	7.3%
2020-2021	14.0%	13.8%
2021-2022	13.2%	12.2%
2022-2023	11.8%	10.8%
CAGR 2023-2028	11.7%	43.5%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Czech Republic

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Czech Republic will be \$30.25 million dollars in 2022 and the value added amount for the market will be \$43.21 million dollars. The cost of resales for this equipment is expected to reach \$2.47 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	30,252.72
Cost of resales (\$1,000)	2,473.30
Cost of purchased fuels consumed (\$1,000)	964.19
Cost of purchased electricity (\$1,000)	918.76
Cost of contract work (\$1,000)	415.71
Value of resales (\$1,000)	3,194.32
Value added (\$1,000)	43,212.15

Capital Expenses Estimates

The total capital expenses for this market in Czech Republic will be \$3.57 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$2.97 million dollars. The expenditures for buildings for this equipment expected to reach \$0.60 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	3,571.00
Capital expenditures for buildings and other structures (\$1,000)	601.22
Capital expenditures for machinery and equipment (\$1,000)	2,969.78
Capital expenditures for automobiles, trucks, etc. (\$1,000)	37.77
Capital expenditures for computers and peripheral equip. (\$1,000)	79.16
Capital expenditures for all other machinery and equip. (\$1,000)	2,852.84

*2021-2022 Forecasts

Source: Barnes Reports

Denmark

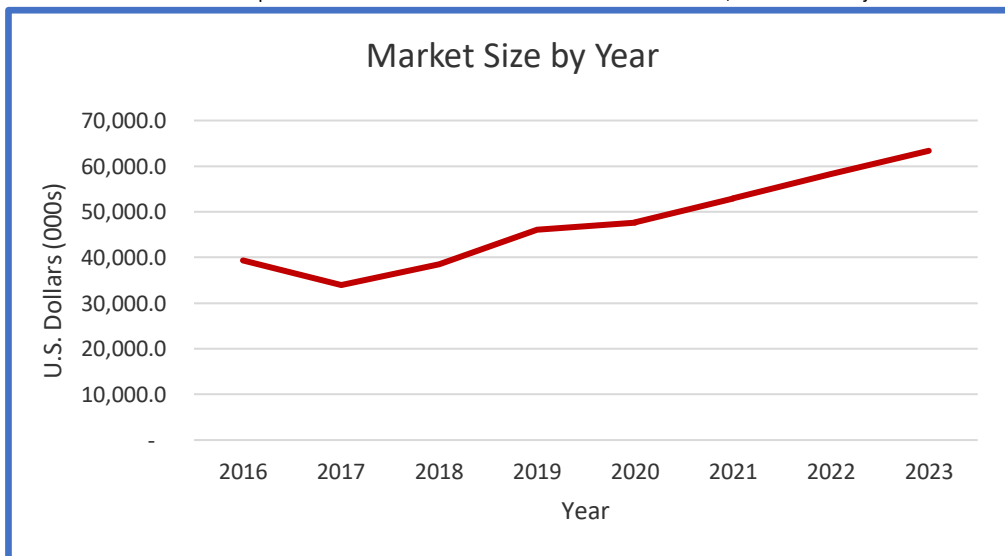
Equipment Type: Inkjet inks

The market for this equipment in Denmark is estimated to be \$58.3 million dollars in 2022 and is expected to change by 8.7 percent from 2022 to 2023. The market will be 413.1 million Kroner in 2022 and is forecast to change by 12.1 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Kroner
2016	39,366.8	262,631.6
2017	33,957.5	224,217.6
2018	38,448.8	242,789.4
2019	46,027.5	306,977.9
2020	47,681.5	323,948.8
2021	52,886.0	368,352.5
2022	58,270.4	413,062.5
2023	63,363.0	457,415.9
2028	87,527.4	654,962.2
Y-to-Y Change	US Dollars	Kroner
2016-2017	-13.7%	-14.6%
2017-2018	13.2%	8.3%
2018-2019	19.7%	26.4%
2019-2020	3.6%	5.5%
2020-2021	10.9%	13.7%
2021-2022	10.2%	12.1%
2022-2023	8.7%	10.7%
CAGR 2023-2028	7.6%	43.2%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Denmark

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Denmark will be \$22.58 million dollars in 2022 and the value added amount for the market will be \$32.25 million dollars. The cost of resales for this equipment is expected to reach \$1.85 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	22,580.12
Cost of resales (\$1,000)	1,846.03
Cost of purchased fuels consumed (\$1,000)	719.66
Cost of purchased electricity (\$1,000)	685.75
Cost of contract work (\$1,000)	310.28
Value of resales (\$1,000)	2,384.19
Value added (\$1,000)	32,252.82

Capital Expenses Estimates

The total capital expenses for this market in Denmark will be \$2.67 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$2.22 million dollars. The expenditures for buildings for this equipment expected to reach \$0.45 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	2,665.33
Capital expenditures for buildings and other structures (\$1,000)	448.74
Capital expenditures for machinery and equipment (\$1,000)	2,216.59
Capital expenditures for automobiles, trucks, etc. (\$1,000)	28.19
Capital expenditures for computers and peripheral equip. (\$1,000)	59.09
Capital expenditures for all other machinery and equip. (\$1,000)	2,129.32

*2021-2022 Forecasts

Source: Barnes Reports

Egypt

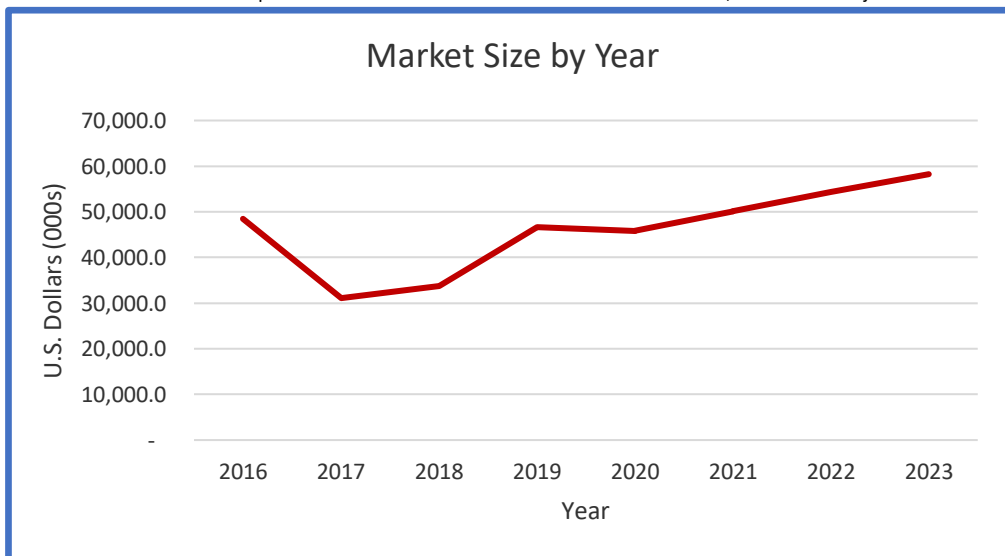
Equipment Type: Inkjet inks

The market for this equipment in Egypt is estimated to be \$54.4 million dollars in 2022 and is expected to change by 7.1 percent from 2022 to 2023. The market will be 1710.6 million Pounds in 2022 and is forecast to change by 26.8 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Pounds
2016	48,427.2	383,554.3
2017	31,092.1	458,384.4
2018	33,772.3	597,307.2
2019	46,589.9	818,119.2
2020	45,842.2	1,050,978.5
2021	50,081.1	1,348,988.8
2022	54,358.4	1,710,595.3
2023	58,240.9	2,126,763.2
2028	64,086.0	5,233,810.0
Y-to-Y Change	US Dollars	Pounds
2016-2017	-35.8%	19.5%
2017-2018	8.6%	30.3%
2018-2019	38.0%	37.0%
2019-2020	-1.6%	28.5%
2020-2021	9.2%	28.4%
2021-2022	8.5%	26.8%
2022-2023	7.1%	24.3%
CAGR 2023-2028	2.0%	146.1%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Egypt

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Egypt will be \$21.06 million dollars in 2022 and the value added amount for the market will be \$30.09 million dollars. The cost of resales for this equipment is expected to reach \$1.72 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	21,064.20
Cost of resales (\$1,000)	1,722.09
Cost of purchased fuels consumed (\$1,000)	671.34
Cost of purchased electricity (\$1,000)	639.71
Cost of contract work (\$1,000)	289.45
Value of resales (\$1,000)	2,224.12
Value added (\$1,000)	30,087.52

Capital Expenses Estimates

The total capital expenses for this market in Egypt will be \$2.49 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$2.07 million dollars. The expenditures for buildings for this equipment expected to reach \$0.42 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	2,486.40
Capital expenditures for buildings and other structures (\$1,000)	418.61
Capital expenditures for machinery and equipment (\$1,000)	2,067.78
Capital expenditures for automobiles, trucks, etc. (\$1,000)	26.30
Capital expenditures for computers and peripheral equip. (\$1,000)	55.12
Capital expenditures for all other machinery and equip. (\$1,000)	1,986.36

*2021-2022 Forecasts

Source: Barnes Reports

Finland

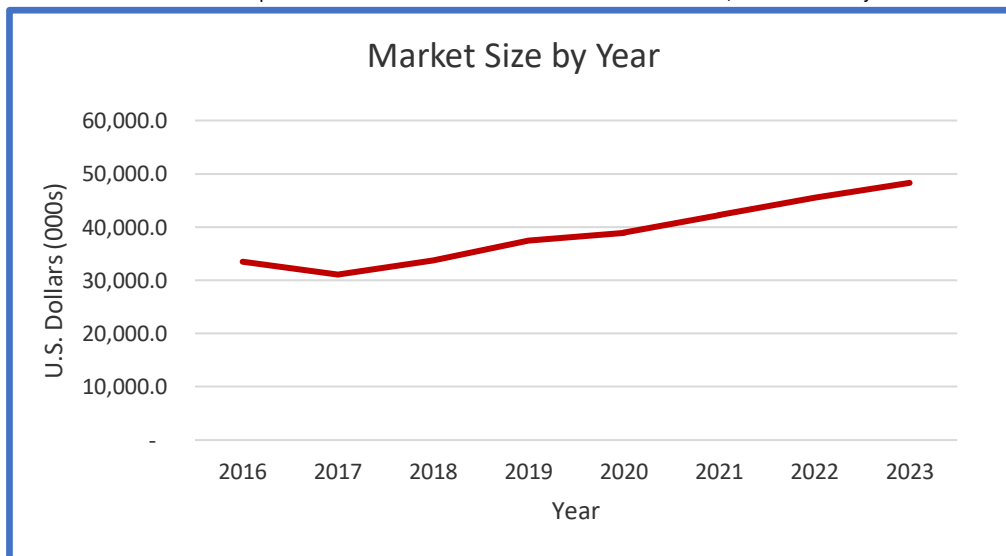
Equipment Type: Inkjet inks

The market for this equipment in Finland is estimated to be \$45.4 million dollars in 2022 and is expected to change by 6.3 percent from 2022 to 2023. The market will be 42.7 million Euros in 2022 and is forecast to change by 9.2 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Euros
2016	33,493.5	30,247.7
2017	31,075.4	27,501.9
2018	33,679.8	28,519.2
2019	37,446.1	33,449.7
2020	38,947.8	35,274.2
2021	42,213.2	39,071.1
2022	45,449.8	42,679.5
2023	48,294.3	46,038.9
2028	59,440.5	57,820.9
Y-to-Y Change	US Dollars	Euros
2016-2017	-7.2%	-9.1%
2017-2018	8.4%	3.7%
2018-2019	11.2%	17.3%
2019-2020	4.0%	5.5%
2020-2021	8.4%	10.8%
2021-2022	7.7%	9.2%
2022-2023	6.3%	7.9%
CAGR 2023-2028	4.6%	25.6%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Finland

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Finland will be \$17.61 million dollars in 2022 and the value added amount for the market will be \$25.16 million dollars. The cost of resales for this equipment is expected to reach \$1.44 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	17,612.06
Cost of resales (\$1,000)	1,439.87
Cost of purchased fuels consumed (\$1,000)	561.32
Cost of purchased electricity (\$1,000)	534.87
Cost of contract work (\$1,000)	242.01
Value of resales (\$1,000)	1,859.62
Value added (\$1,000)	25,156.59

Capital Expenses Estimates

The total capital expenses for this market in Finland will be \$2.08 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$1.73 million dollars. The expenditures for buildings for this equipment expected to reach \$0.35 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	2,078.91
Capital expenditures for buildings and other structures (\$1,000)	350.01
Capital expenditures for machinery and equipment (\$1,000)	1,728.90
Capital expenditures for automobiles, trucks, etc. (\$1,000)	21.99
Capital expenditures for computers and peripheral equip. (\$1,000)	46.09
Capital expenditures for all other machinery and equip. (\$1,000)	1,660.83

*2021-2022 Forecasts

Source: Barnes Reports

France

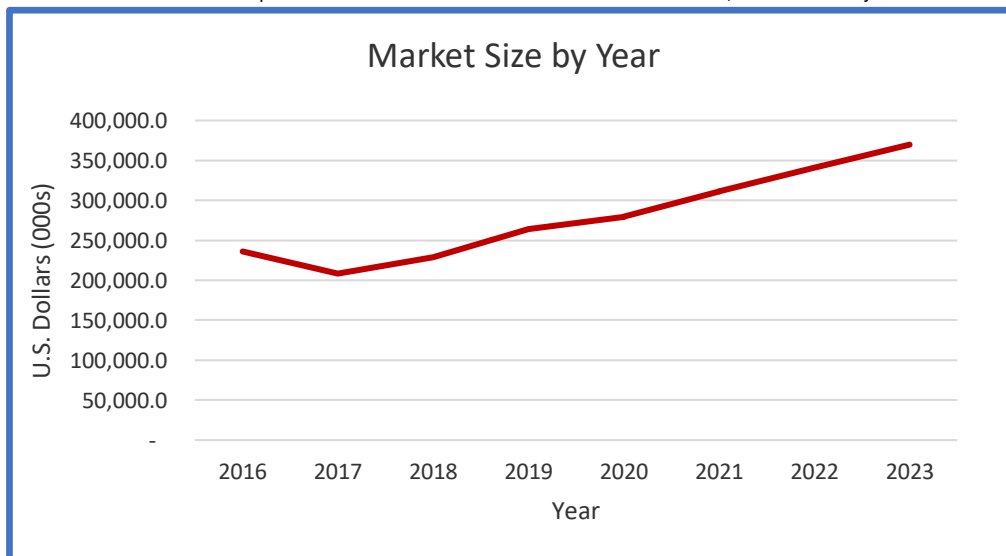
Equipment Type: Inkjet inks

The market for this equipment in France is estimated to be \$341.3 million dollars in 2022 and is expected to change by 8.3 percent from 2022 to 2023. The market will be 295.1 million Euros in 2022 and is forecast to change by 9.3 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Euros
2016	236,176.9	210,459.5
2017	208,354.5	184,261.6
2018	229,221.0	194,098.0
2019	263,822.5	235,666.4
2020	279,670.5	243,528.8
2021	311,112.0	269,929.5
2022	341,312.0	295,063.2
2023	369,768.4	318,510.1
2028	474,513.3	401,412.9
Y-to-Y Change	US Dollars	Euros
2016-2017	-11.8%	-12.4%
2017-2018	10.0%	5.3%
2018-2019	15.1%	21.4%
2019-2020	6.0%	3.3%
2020-2021	11.2%	10.8%
2021-2022	9.7%	9.3%
2022-2023	8.3%	7.9%
CAGR 2023-2028	5.7%	26.0%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



France

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in France will be \$132.26 million dollars in 2022 and the value added amount for the market will be \$188.92 million dollars. The cost of resales for this equipment is expected to reach \$10.81 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	132,260.42
Cost of resales (\$1,000)	10,812.88
Cost of purchased fuels consumed (\$1,000)	4,215.32
Cost of purchased electricity (\$1,000)	4,016.70
Cost of contract work (\$1,000)	1,817.41
Value of resales (\$1,000)	13,965.09
Value added (\$1,000)	188,917.15

Capital Expenses Estimates

The total capital expenses for this market in France will be \$15.61 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$12.98 million dollars. The expenditures for buildings for this equipment expected to reach \$2.63 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	15,611.89
Capital expenditures for buildings and other structures (\$1,000)	2,628.45
Capital expenditures for machinery and equipment (\$1,000)	12,983.44
Capital expenditures for automobiles, trucks, etc. (\$1,000)	165.13
Capital expenditures for computers and peripheral equip. (\$1,000)	346.09
Capital expenditures for all other machinery and equip. (\$1,000)	12,472.22

*2021-2022 Forecasts

Source: Barnes Reports

Germany

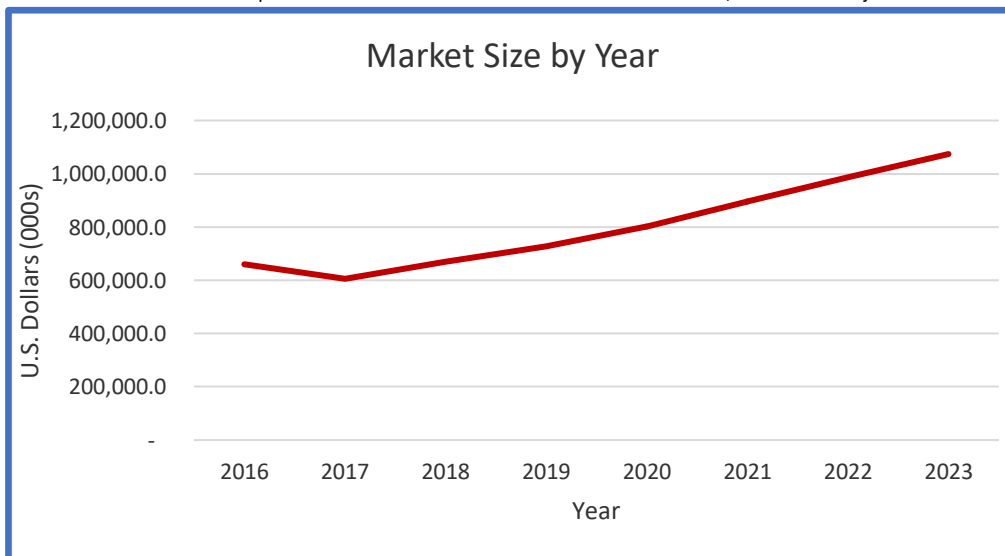
Equipment Type: Inkjet inks

The market for this equipment in Germany is estimated to be \$987.0 million dollars in 2022 and is expected to change by 8.8 percent from 2022 to 2023. The market will be 837.5 million Euros in 2022 and is forecast to change by 9.2 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Euros
2016	659,489.6	597,635.4
2017	605,540.5	536,027.8
2018	669,859.5	567,218.7
2019	728,575.0	650,818.8
2020	801,583.6	692,155.8
2021	895,664.6	766,655.0
2022	986,976.6	837,453.9
2023	1,074,018.2	903,369.2
2028	1,409,169.4	1,134,525.9
Y-to-Y Change	US Dollars	Euros
2016-2017	-8.2%	-10.3%
2017-2018	10.6%	5.8%
2018-2019	8.8%	14.7%
2019-2020	10.0%	6.4%
2020-2021	11.7%	10.8%
2021-2022	10.2%	9.2%
2022-2023	8.8%	7.9%
CAGR 2023-2028	6.2%	25.6%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Germany

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Germany will be \$382.46 million dollars in 2022 and the value added amount for the market will be \$546.29 million dollars. The cost of resales for this equipment is expected to reach \$31.27 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	382,459.25
Cost of resales (\$1,000)	31,267.76
Cost of purchased fuels consumed (\$1,000)	12,189.49
Cost of purchased electricity (\$1,000)	11,615.14
Cost of contract work (\$1,000)	5,255.42
Value of resales (\$1,000)	40,383.06
Value added (\$1,000)	546,294.31

Capital Expenses Estimates

The total capital expenses for this market in Germany will be \$45.15 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$37.54 million dollars. The expenditures for buildings for this equipment expected to reach \$7.60 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	45,145.10
Capital expenditures for buildings and other structures (\$1,000)	7,600.72
Capital expenditures for machinery and equipment (\$1,000)	37,544.38
Capital expenditures for automobiles, trucks, etc. (\$1,000)	477.52
Capital expenditures for computers and peripheral equip. (\$1,000)	1,000.78
Capital expenditures for all other machinery and equip. (\$1,000)	36,066.08

*2021-2022 Forecasts

Source: Barnes Reports

Hungary

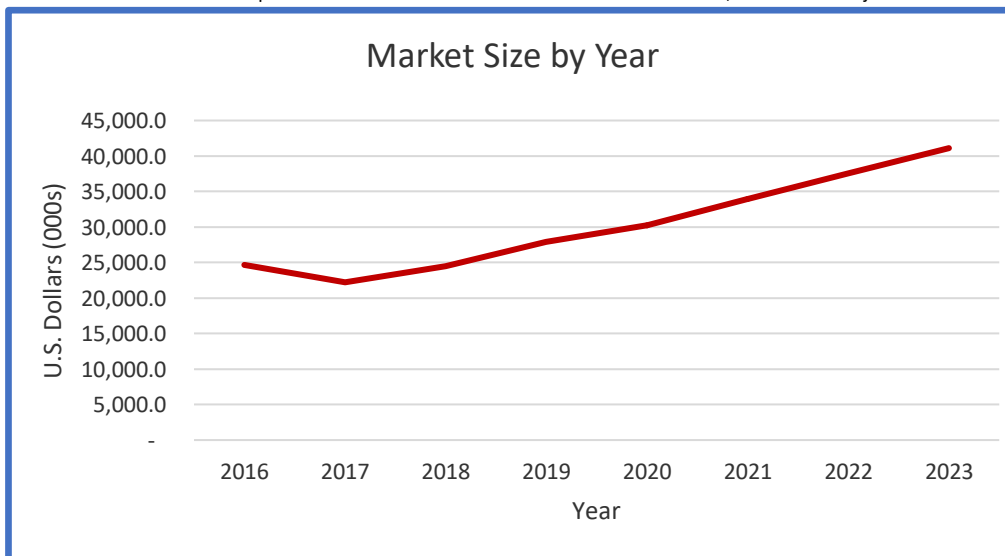
Equipment Type: Inkjet inks

The market for this equipment in Hungary is estimated to be \$37.6 million dollars in 2022 and is expected to change by 9.3 percent from 2022 to 2023. The market will be 10923.9 million Forints in 2022 and is forecast to change by 11.8 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Forints
2016	24,672.0	6,919,425.1
2017	22,216.8	6,097,031.1
2018	24,464.1	6,610,495.4
2019	27,925.6	8,116,842.7
2020	30,237.1	8,626,708.2
2021	33,950.2	9,775,278.1
2022	37,593.1	10,923,906.1
2023	41,107.2	12,055,082.4
2028	55,257.9	16,965,192.5
Y-to-Y Change	US Dollars	Forints
2016-2017	-10.0%	-11.9%
2017-2018	10.1%	8.4%
2018-2019	14.1%	22.8%
2019-2020	8.3%	6.3%
2020-2021	12.3%	13.3%
2021-2022	10.7%	11.8%
2022-2023	9.3%	10.4%
CAGR 2023-2028	6.9%	40.7%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Hungary

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Hungary will be \$14.57 million dollars in 2022 and the value added amount for the market will be \$20.81 million dollars. The cost of resales for this equipment is expected to reach \$1.19 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	14,567.56
Cost of resales (\$1,000)	1,190.96
Cost of purchased fuels consumed (\$1,000)	464.29
Cost of purchased electricity (\$1,000)	442.41
Cost of contract work (\$1,000)	200.17
Value of resales (\$1,000)	1,538.16
Value added (\$1,000)	20,807.91

Capital Expenses Estimates

The total capital expenses for this market in Hungary will be \$1.72 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$1.43 million dollars. The expenditures for buildings for this equipment expected to reach \$0.29 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	1,719.54
Capital expenditures for buildings and other structures (\$1,000)	289.51
Capital expenditures for machinery and equipment (\$1,000)	1,430.03
Capital expenditures for automobiles, trucks, etc. (\$1,000)	18.19
Capital expenditures for computers and peripheral equip. (\$1,000)	38.12
Capital expenditures for all other machinery and equip. (\$1,000)	1,373.73

*2021-2022 Forecasts

Source: Barnes Reports

India

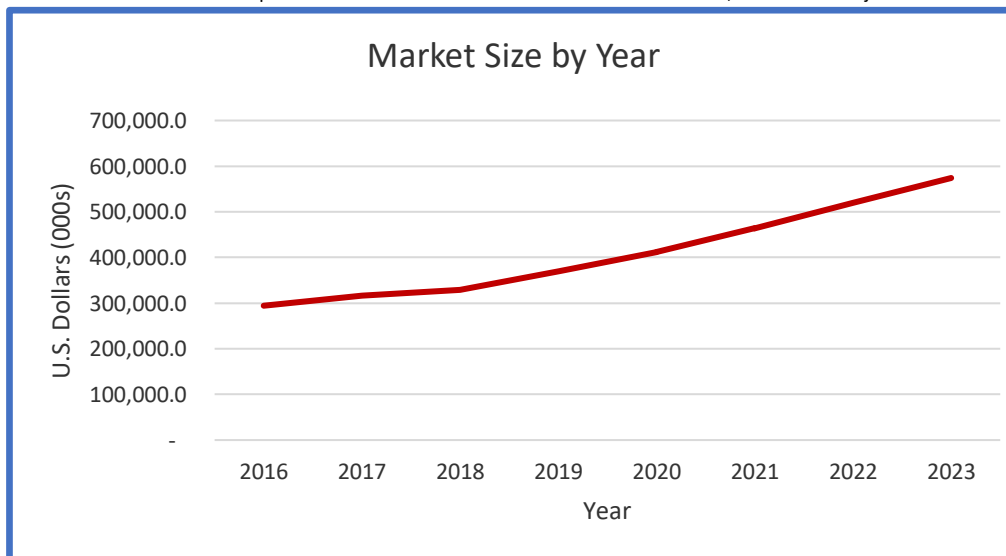
Equipment Type: Inkjet inks

The market for this equipment in India is estimated to be \$519.6 million dollars in 2022 and is expected to change by 10.5 percent from 2022 to 2023. The market will be 37309.1 million Rupees in 2022 and is forecast to change by 12.9 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Rupees
2016	294,307.0	20,804,222.3
2017	316,901.6	20,421,919.0
2018	328,913.6	22,998,593.3
2019	369,568.2	26,201,279.2
2020	412,023.8	29,052,562.7
2021	464,248.8	33,032,447.7
2022	519,632.6	37,309,055.3
2023	574,014.4	41,588,040.8
2028	857,871.8	65,029,032.6
Y-to-Y Change	US Dollars	Rupees
2016-2017	7.7%	-1.8%
2017-2018	3.8%	12.6%
2018-2019	12.4%	13.9%
2019-2020	11.5%	10.9%
2020-2021	12.7%	13.7%
2021-2022	11.9%	12.9%
2022-2023	10.5%	11.5%
CAGR 2023-2028	9.9%	56.4%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



India

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in India will be \$201.36 million dollars in 2022 and the value added amount for the market will be \$287.62 million dollars. The cost of resales for this equipment is expected to reach \$16.46 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	201,360.71
Cost of resales (\$1,000)	16,462.14
Cost of purchased fuels consumed (\$1,000)	6,417.64
Cost of purchased electricity (\$1,000)	6,115.25
Cost of contract work (\$1,000)	2,766.92
Value of resales (\$1,000)	21,261.25
Value added (\$1,000)	287,618.12

Capital Expenses Estimates

The total capital expenses for this market in India will be \$23.77 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$19.77 million dollars. The expenditures for buildings for this equipment expected to reach \$4.00 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	23,768.41
Capital expenditures for buildings and other structures (\$1,000)	4,001.70
Capital expenditures for machinery and equipment (\$1,000)	19,766.71
Capital expenditures for automobiles, trucks, etc. (\$1,000)	251.41
Capital expenditures for computers and peripheral equip. (\$1,000)	526.90
Capital expenditures for all other machinery and equip. (\$1,000)	18,988.41

*2021-2022 Forecasts

Source: Barnes Reports

Indonesia

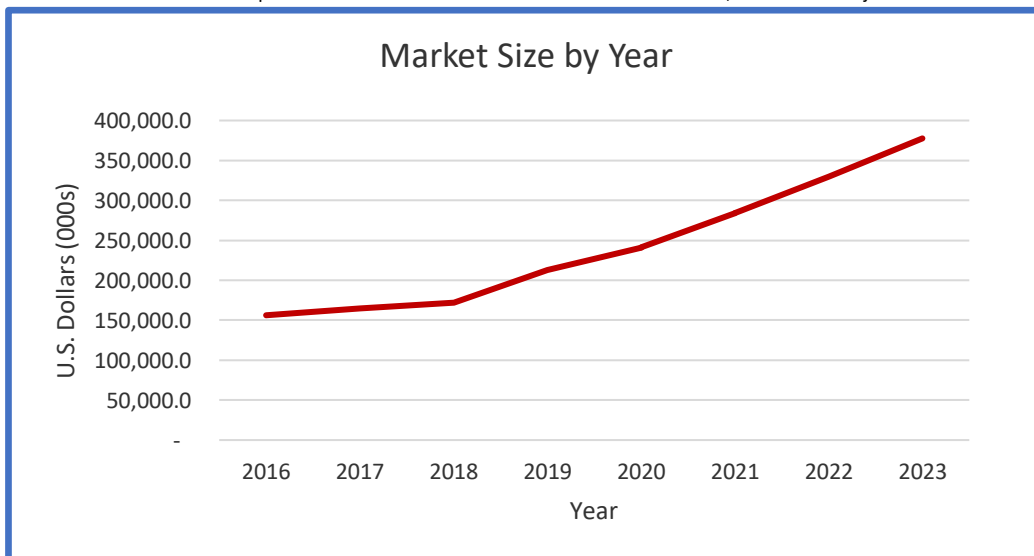
Equipment Type: Inkjet inks

The market for this equipment in Indonesia is estimated to be \$329.5 million dollars in 2022 and is expected to change by 14.6 percent from 2022 to 2023. The market will be 4783695.5 million Rupiahs in 2022 and is forecast to change by 17.1 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Rupiahs
2016	156,212.8	2,189,453,152.0
2017	164,517.1	2,200,952,883.7
2018	172,091.2	2,450,051,729.2
2019	213,011.4	3,013,614,641.9
2020	241,267.0	3,440,184,333.6
2021	283,912.8	4,084,982,569.3
2022	329,485.8	4,783,695,462.2
2023	377,600.0	5,531,975,264.6
2028	641,852.8	9,837,647,209.6
Y-to-Y Change	US Dollars	Rupiahs
2016-2017	5.3%	0.5%
2017-2018	4.6%	11.3%
2018-2019	23.8%	23.0%
2019-2020	13.3%	14.2%
2020-2021	17.7%	18.7%
2021-2022	16.1%	17.1%
2022-2023	14.6%	15.6%
CAGR 2023-2028	14.0%	77.8%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Indonesia

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Indonesia will be \$127.68 million dollars in 2022 and the value added amount for the market will be \$182.37 million dollars. The cost of resales for this equipment is expected to reach \$10.44 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	127,677.70
Cost of resales (\$1,000)	10,438.23
Cost of purchased fuels consumed (\$1,000)	4,069.26
Cost of purchased electricity (\$1,000)	3,877.52
Cost of contract work (\$1,000)	1,754.44
Value of resales (\$1,000)	13,481.22
Value added (\$1,000)	182,371.33

Capital Expenses Estimates

The total capital expenses for this market in Indonesia will be \$15.07 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$12.53 million dollars. The expenditures for buildings for this equipment expected to reach \$2.54 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	15,070.95
Capital expenditures for buildings and other structures (\$1,000)	2,537.38
Capital expenditures for machinery and equipment (\$1,000)	12,533.57
Capital expenditures for automobiles, trucks, etc. (\$1,000)	159.41
Capital expenditures for computers and peripheral equip. (\$1,000)	334.09
Capital expenditures for all other machinery and equip. (\$1,000)	12,040.06

*2021-2022 Forecasts

Source: Barnes Reports

Ireland

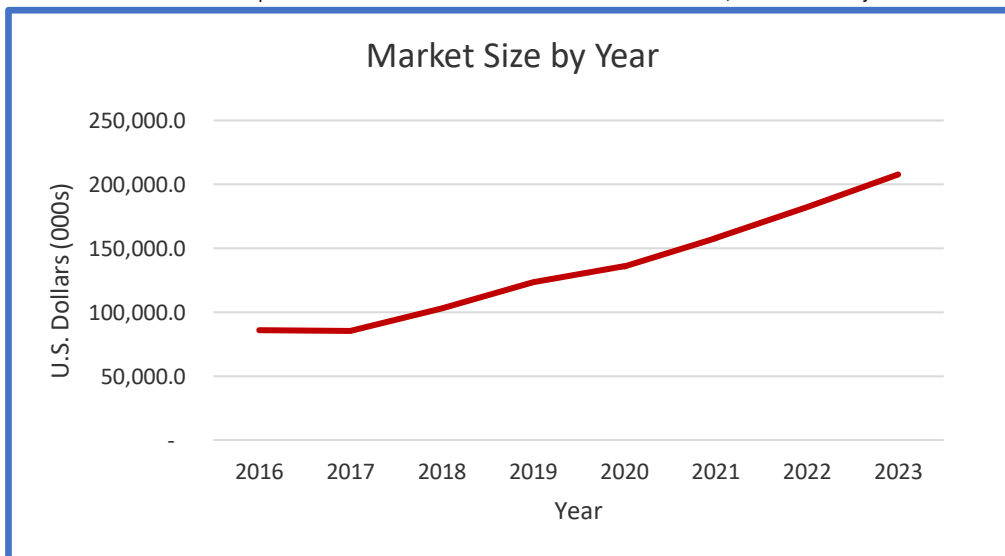
Equipment Type: Inkjet inks

The market for this equipment in Ireland is estimated to be \$182.3 million dollars in 2022 and is expected to change by 14 percent from 2022 to 2023. The market will be 151.7 million Euros in 2022 and is forecast to change by 13.9 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Euros
2016	85,985.4	79,327.2
2017	85,366.3	75,566.7
2018	103,033.0	87,245.5
2019	123,421.0	110,249.0
2020	135,802.1	116,218.9
2021	157,865.2	133,206.5
2022	182,298.7	151,667.2
2023	207,759.9	170,426.9
2028	362,927.1	277,421.2
Y-to-Y Change	US Dollars	Euros
2016-2017	-0.7%	-4.7%
2017-2018	20.7%	15.5%
2018-2019	19.8%	26.4%
2019-2020	10.0%	5.4%
2020-2021	16.2%	14.6%
2021-2022	15.5%	13.9%
2022-2023	14.0%	12.4%
CAGR 2023-2028	14.9%	62.8%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Ireland

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Ireland will be \$70.64 million dollars in 2022 and the value added amount for the market will be \$100.90 million dollars. The cost of resales for this equipment is expected to reach \$5.78 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	70,641.84
Cost of resales (\$1,000)	5,775.29
Cost of purchased fuels consumed (\$1,000)	2,251.45
Cost of purchased electricity (\$1,000)	2,145.36
Cost of contract work (\$1,000)	970.70
Value of resales (\$1,000)	7,458.92
Value added (\$1,000)	100,902.87

Capital Expenses Estimates

The total capital expenses for this market in Ireland will be \$8.34 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$6.93 million dollars. The expenditures for buildings for this equipment expected to reach \$1.40 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	8,338.49
Capital expenditures for buildings and other structures (\$1,000)	1,403.89
Capital expenditures for machinery and equipment (\$1,000)	6,934.61
Capital expenditures for automobiles, trucks, etc. (\$1,000)	88.20
Capital expenditures for computers and peripheral equip. (\$1,000)	184.85
Capital expenditures for all other machinery and equip. (\$1,000)	6,661.56

*2021-2022 Forecasts

Source: Barnes Reports

Israel

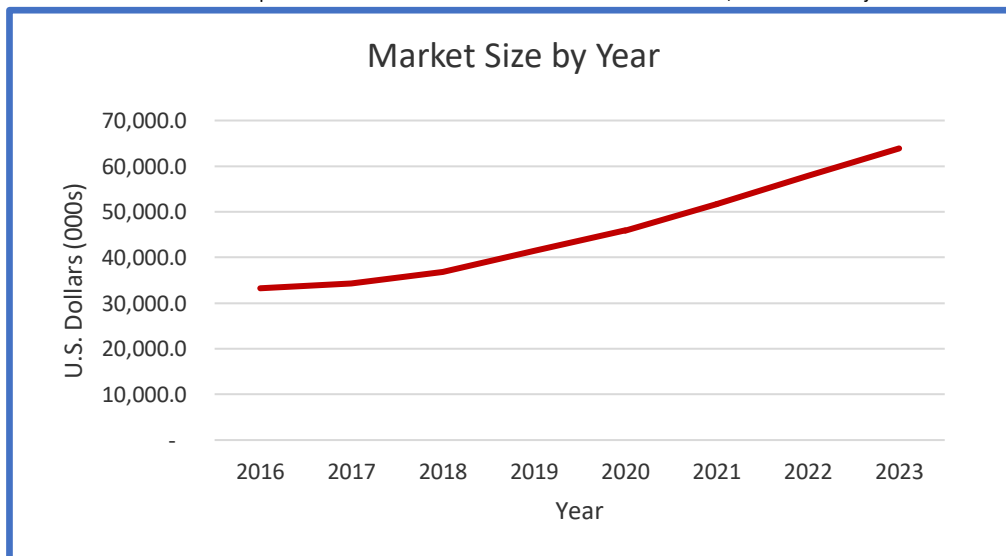
Equipment Type: Inkjet inks

The market for this equipment in Israel is estimated to be \$57.8 million dollars in 2022 and is expected to change by 10.5 percent from 2022 to 2023. The market will be 202.5 million New Shekels in 2022 and is forecast to change by 10.8 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	New Shekels
2016	33,250.0	131,992.3
2017	34,254.6	123,301.3
2018	36,836.4	132,263.2
2019	41,448.6	147,744.7
2020	45,871.7	162,824.7
2021	51,678.9	182,863.6
2022	57,836.2	202,534.6
2023	63,880.1	221,520.8
2028	95,403.9	298,138.7
Y-to-Y Change	US Dollars	New Shekels
2016-2017	3.0%	-6.6%
2017-2018	7.5%	7.3%
2018-2019	12.5%	11.7%
2019-2020	10.7%	10.2%
2020-2021	12.7%	12.3%
2021-2022	11.9%	10.8%
2022-2023	10.5%	9.4%
CAGR 2023-2028	9.9%	34.6%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Israel

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Israel will be \$22.41 million dollars in 2022 and the value added amount for the market will be \$32.01 million dollars. The cost of resales for this equipment is expected to reach \$1.83 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	22,411.85
Cost of resales (\$1,000)	1,832.27
Cost of purchased fuels consumed (\$1,000)	714.30
Cost of purchased electricity (\$1,000)	680.64
Cost of contract work (\$1,000)	307.96
Value of resales (\$1,000)	2,366.42
Value added (\$1,000)	32,012.48

Capital Expenses Estimates

The total capital expenses for this market in Israel will be \$2.65 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$2.20 million dollars. The expenditures for buildings for this equipment expected to reach \$0.45 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	2,645.47
Capital expenditures for buildings and other structures (\$1,000)	445.40
Capital expenditures for machinery and equipment (\$1,000)	2,200.08
Capital expenditures for automobiles, trucks, etc. (\$1,000)	27.98
Capital expenditures for computers and peripheral equip. (\$1,000)	58.65
Capital expenditures for all other machinery and equip. (\$1,000)	2,113.45

*2021-2022 Forecasts

Source: Barnes Reports

Italy

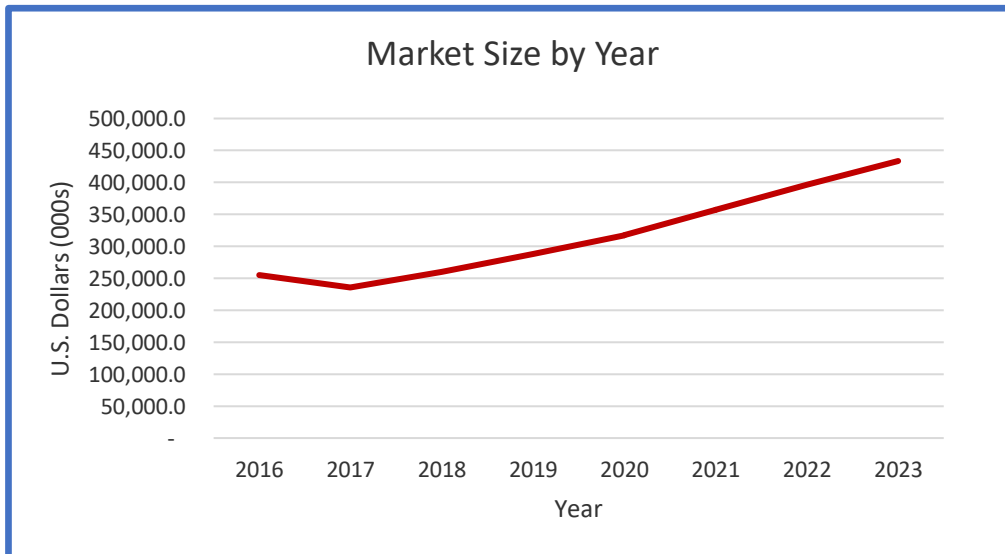
Equipment Type: Inkjet inks

The market for this equipment in Italy is estimated to be \$395.9 million dollars in 2022 and is expected to change by 9.5 percent from 2022 to 2023. The market will be 341.7 million Euros in 2022 and is forecast to change by 10.4 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Euros
2016	255,237.6	227,750.3
2017	235,618.5	208,571.9
2018	260,054.0	220,206.6
2019	288,288.5	257,521.3
2020	317,543.0	276,321.4
2021	357,026.0	309,403.7
2022	395,878.7	341,665.5
2023	433,478.6	372,580.6
2028	586,709.7	494,018.7
Y-to-Y Change	US Dollars	Euros
2016-2017	-7.7%	-8.4%
2017-2018	10.4%	5.6%
2018-2019	10.9%	16.9%
2019-2020	10.1%	7.3%
2020-2021	12.4%	12.0%
2021-2022	10.9%	10.4%
2022-2023	9.5%	9.0%
CAGR 2023-2028	7.1%	32.6%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Italy

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Italy will be \$153.41 million dollars in 2022 and the value added amount for the market will be \$219.12 million dollars. The cost of resales for this equipment is expected to reach \$12.54 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	153,405.32
Cost of resales (\$1,000)	12,541.57
Cost of purchased fuels consumed (\$1,000)	4,889.23
Cost of purchased electricity (\$1,000)	4,658.86
Cost of contract work (\$1,000)	2,107.96
Value of resales (\$1,000)	16,197.74
Value added (\$1,000)	219,119.96

Capital Expenses Estimates

The total capital expenses for this market in Italy will be \$18.11 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$15.06 million dollars. The expenditures for buildings for this equipment expected to reach \$3.05 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	18,107.81
Capital expenditures for buildings and other structures (\$1,000)	3,048.67
Capital expenditures for machinery and equipment (\$1,000)	15,059.14
Capital expenditures for automobiles, trucks, etc. (\$1,000)	191.53
Capital expenditures for computers and peripheral equip. (\$1,000)	401.42
Capital expenditures for all other machinery and equip. (\$1,000)	14,466.19

*2021-2022 Forecasts

Source: Barnes Reports

Japan

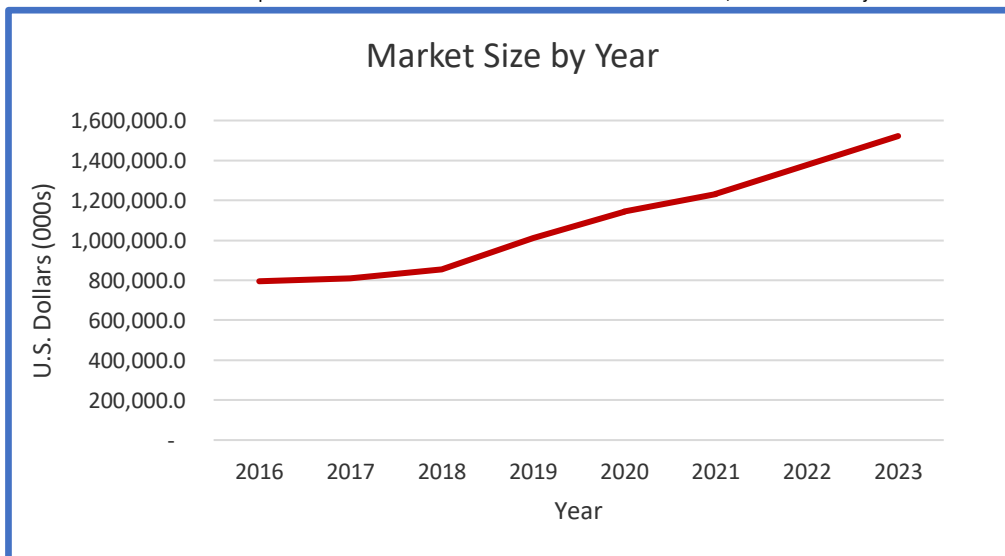
Equipment Type: Inkjet inks

The market for this equipment in Japan is estimated to be \$1,378.1 million dollars in 2022 and is expected to change by 10.5 percent from 2022 to 2023. The market will be 150652 million Yens in 2022 and is forecast to change by 11.2 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Yens
2016	795,037.3	94,768,521.0
2017	810,392.3	90,769,446.8
2018	854,491.8	94,355,706.2
2019	1,010,028.2	110,102,836.5
2020	1,144,355.6	120,065,389.4
2021	1,231,328.9	135,429,718.4
2022	1,378,083.2	150,652,013.2
2023	1,522,150.1	165,492,872.1
2028	2,273,712.8	227,629,501.4
Y-to-Y Change	US Dollars	Yens
2016-2017	1.9%	-4.2%
2017-2018	5.4%	4.0%
2018-2019	18.2%	16.7%
2019-2020	13.3%	9.0%
2020-2021	7.6%	12.8%
2021-2022	11.9%	11.2%
2022-2023	10.5%	9.9%
CAGR 2023-2028	9.9%	37.5%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Japan

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Japan will be \$534.02 million dollars in 2022 and the value added amount for the market will be \$762.77 million dollars. The cost of resales for this equipment is expected to reach \$43.66 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	534,015.38
Cost of resales (\$1,000)	43,658.15
Cost of purchased fuels consumed (\$1,000)	17,019.78
Cost of purchased electricity (\$1,000)	16,217.84
Cost of contract work (\$1,000)	7,337.97
Value of resales (\$1,000)	56,385.54
Value added (\$1,000)	762,772.92

Capital Expenses Estimates

The total capital expenses for this market in Japan will be \$63.03 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$52.42 million dollars. The expenditures for buildings for this equipment expected to reach \$10.61 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	63,034.63
Capital expenditures for buildings and other structures (\$1,000)	10,612.64
Capital expenditures for machinery and equipment (\$1,000)	52,421.99
Capital expenditures for automobiles, trucks, etc. (\$1,000)	666.74
Capital expenditures for computers and peripheral equip. (\$1,000)	1,397.36
Capital expenditures for all other machinery and equip. (\$1,000)	50,357.89

*2021-2022 Forecasts

Source: Barnes Reports

South Korea

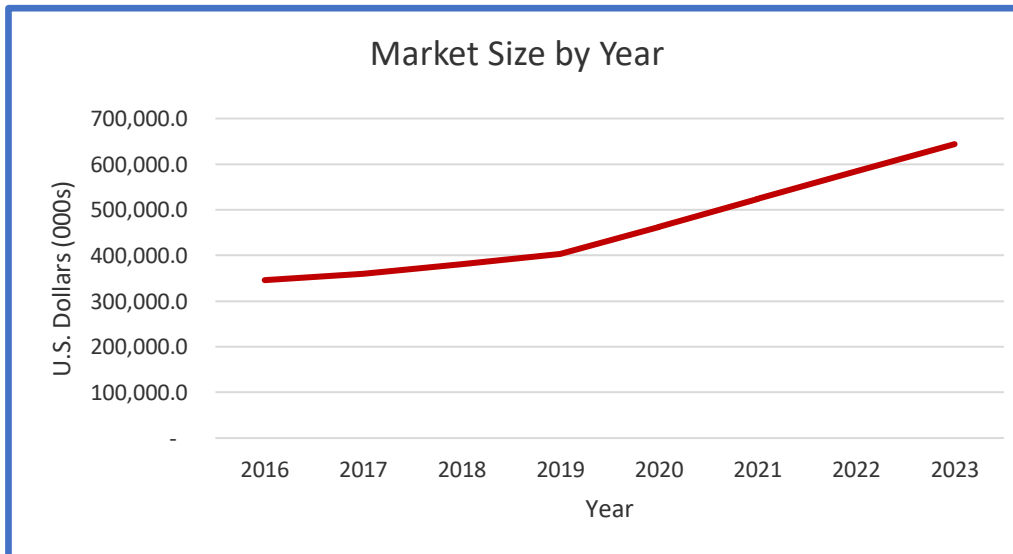
Equipment Type: Inkjet inks

The market for this equipment in South Korea is estimated to be \$584.2 million dollars in 2022 and is expected to change by 10.2 percent from 2022 to 2023. The market will be 674300.6 million Wons in 2022 and is forecast to change by 12.3 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Wons
2016	345,955.2	398,587,174.5
2017	359,699.5	383,288,884.7
2018	381,146.5	419,451,701.4
2019	402,826.6	469,437,006.6
2020	462,646.4	526,928,383.6
2021	523,516.8	600,233,414.2
2022	584,220.8	674,300,630.9
2023	643,823.3	748,049,527.6
2028	899,793.4	1,080,791,137.2
Y-to-Y Change	US Dollars	Wons
2016-2017	4.0%	-3.8%
2017-2018	6.0%	9.4%
2018-2019	5.7%	11.9%
2019-2020	14.8%	12.2%
2020-2021	13.2%	13.9%
2021-2022	11.6%	12.3%
2022-2023	10.2%	10.9%
CAGR 2023-2028	8.0%	44.5%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



South Korea

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in South Korea will be \$226.39 million dollars in 2022 and the value added amount for the market will be \$323.37 million dollars. The cost of resales for this equipment is expected to reach \$18.51 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	226,389.00
Cost of resales (\$1,000)	18,508.32
Cost of purchased fuels consumed (\$1,000)	7,215.32
Cost of purchased electricity (\$1,000)	6,875.34
Cost of contract work (\$1,000)	3,110.84
Value of resales (\$1,000)	23,903.93
Value added (\$1,000)	323,367.84

Capital Expenses Estimates

The total capital expenses for this market in South Korea will be \$26.72 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$22.22 million dollars. The expenditures for buildings for this equipment expected to reach \$4.50 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	26,722.73
Capital expenditures for buildings and other structures (\$1,000)	4,499.10
Capital expenditures for machinery and equipment (\$1,000)	22,223.63
Capital expenditures for automobiles, trucks, etc. (\$1,000)	282.66
Capital expenditures for computers and peripheral equip. (\$1,000)	592.39
Capital expenditures for all other machinery and equip. (\$1,000)	21,348.58

*2021-2022 Forecasts

Source: Barnes Reports

Malaysia

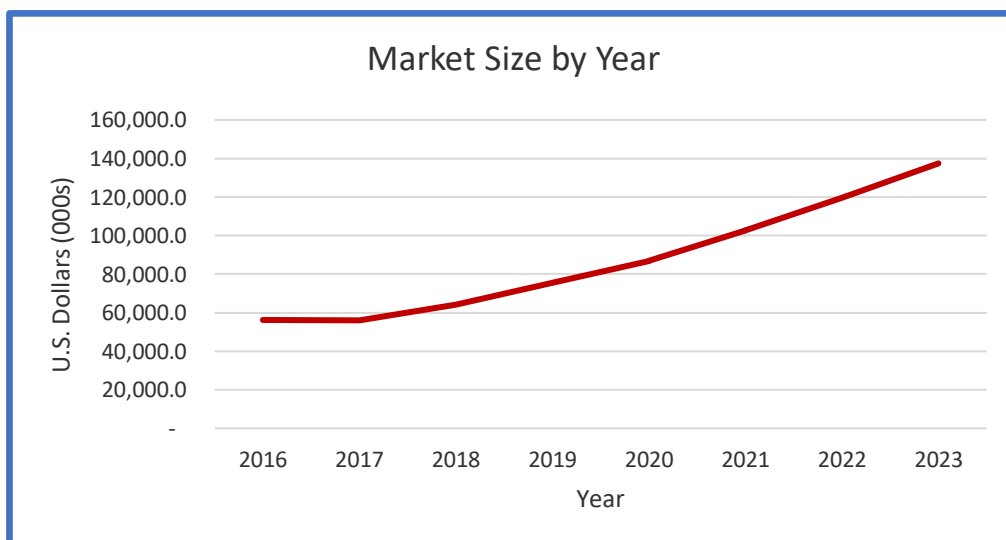
Equipment Type: Inkjet inks

The market for this equipment in Malaysia is estimated to be \$119.5 million dollars in 2022 and is expected to change by 15 percent from 2022 to 2023. The market will be 496.2 million Ringgits in 2022 and is forecast to change by 16.6 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Ringgits
2016	56,287.2	227,258.6
2017	56,003.7	240,838.5
2018	64,275.5	259,358.2
2019	75,541.2	312,929.5
2020	86,917.4	359,949.1
2021	102,627.5	425,576.9
2022	119,504.8	496,226.4
2023	137,420.2	571,380.0
2028	237,576.5	994,439.5
Y-to-Y Change	US Dollars	Ringgits
2016-2017	-0.5%	6.0%
2017-2018	14.8%	7.7%
2018-2019	17.5%	20.7%
2019-2020	15.1%	15.0%
2020-2021	18.1%	18.2%
2021-2022	16.4%	16.6%
2022-2023	15.0%	15.1%
CAGR 2023-2028	14.6%	74.0%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Malaysia

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Malaysia will be \$46.31 million dollars in 2022 and the value added amount for the market will be \$66.15 million dollars. The cost of resales for this equipment is expected to reach \$3.79 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	46,308.82
Cost of resales (\$1,000)	3,785.95
Cost of purchased fuels consumed (\$1,000)	1,475.92
Cost of purchased electricity (\$1,000)	1,406.38
Cost of contract work (\$1,000)	636.34
Value of resales (\$1,000)	4,889.65
Value added (\$1,000)	66,146.25

Capital Expenses Estimates

The total capital expenses for this market in Malaysia will be \$5.47 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$4.55 million dollars. The expenditures for buildings for this equipment expected to reach \$0.92 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	5,466.25
Capital expenditures for buildings and other structures (\$1,000)	920.31
Capital expenditures for machinery and equipment (\$1,000)	4,545.94
Capital expenditures for automobiles, trucks, etc. (\$1,000)	57.82
Capital expenditures for computers and peripheral equip. (\$1,000)	121.18
Capital expenditures for all other machinery and equip. (\$1,000)	4,366.94

*2021-2022 Forecasts

Source: Barnes Reports

Mexico

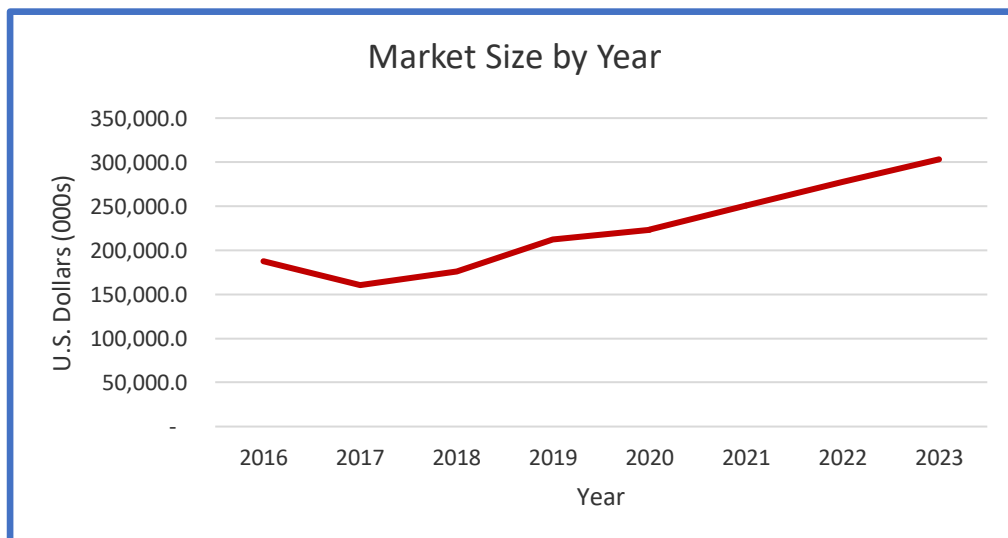
Equipment Type: Inkjet inks

The market for this equipment in Mexico is estimated to be \$277.5 million dollars in 2022 and is expected to change by 9.3 percent from 2022 to 2023. The market will be 6356.5 million Pesos in 2022 and is forecast to change by 16.1 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Pesos
2016	187,779.3	3,098,195.4
2017	160,518.8	3,038,058.3
2018	175,770.0	3,382,569.7
2019	212,410.4	4,091,789.7
2020	223,492.8	4,649,664.5
2021	250,768.5	5,474,406.3
2022	277,489.8	6,356,488.5
2023	303,224.7	7,288,545.8
2028	406,237.1	12,421,856.0
Y-to-Y Change	US Dollars	Pesos
2016-2017	-14.5%	-1.9%
2017-2018	9.5%	11.3%
2018-2019	20.8%	21.0%
2019-2020	5.2%	13.6%
2020-2021	12.2%	17.7%
2021-2022	10.7%	16.1%
2022-2023	9.3%	14.7%
CAGR 2023-2028	6.8%	70.4%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Mexico

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Mexico will be \$107.53 million dollars in 2022 and the value added amount for the market will be \$153.59 million dollars. The cost of resales for this equipment is expected to reach \$8.79 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	107,528.95
Cost of resales (\$1,000)	8,790.97
Cost of purchased fuels consumed (\$1,000)	3,427.09
Cost of purchased electricity (\$1,000)	3,265.61
Cost of contract work (\$1,000)	1,477.57
Value of resales (\$1,000)	11,353.75
Value added (\$1,000)	153,591.40

Capital Expenses Estimates

The total capital expenses for this market in Mexico will be \$12.69 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$10.56 million dollars. The expenditures for buildings for this equipment expected to reach \$2.14 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	12,692.61
Capital expenditures for buildings and other structures (\$1,000)	2,136.95
Capital expenditures for machinery and equipment (\$1,000)	10,555.65
Capital expenditures for automobiles, trucks, etc. (\$1,000)	134.25
Capital expenditures for computers and peripheral equip. (\$1,000)	281.37
Capital expenditures for all other machinery and equip. (\$1,000)	10,140.03

*2021-2022 Forecasts

Source: Barnes Reports

Netherlands

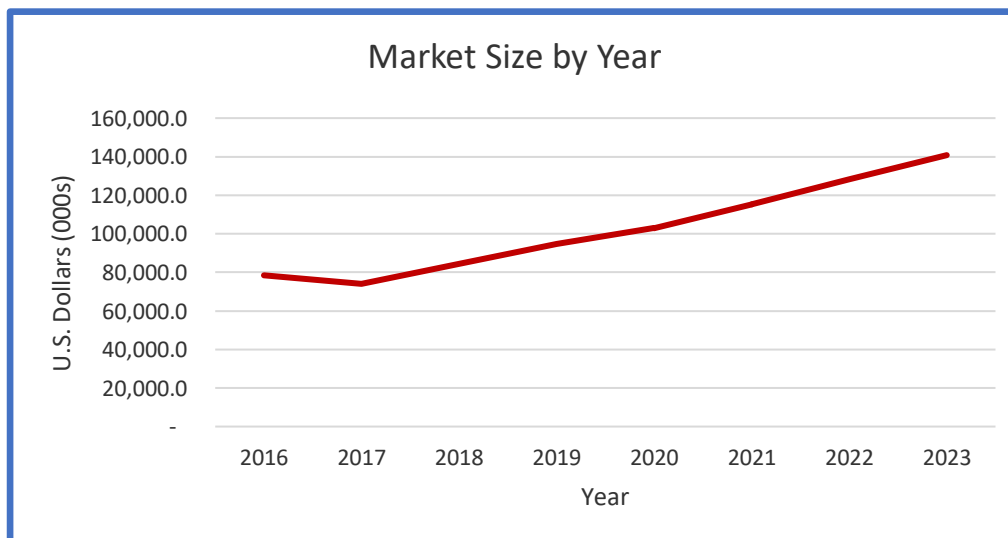
Equipment Type: Inkjet inks

The market for this equipment in Netherlands is estimated to be \$128.2 million dollars in 2022 and is expected to change by 9.8 percent from 2022 to 2023. The market will be 120.6 million Euros in 2022 and is forecast to change by 12.9 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Euros
2016	78,515.5	70,812.7
2017	74,039.1	65,539.9
2018	84,394.4	71,462.9
2019	94,736.6	84,626.0
2020	102,883.0	93,240.8
2021	115,231.6	106,765.1
2022	128,208.6	120,563.9
2023	140,780.7	134,446.3
2028	204,193.2	199,358.1
Y-to-Y Change	US Dollars	Euros
2016-2017	-5.7%	-7.4%
2017-2018	14.0%	9.0%
2018-2019	12.3%	18.4%
2019-2020	8.6%	10.2%
2020-2021	12.0%	14.5%
2021-2022	11.3%	12.9%
2022-2023	9.8%	11.5%
CAGR 2023-2028	9.0%	48.3%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Netherlands

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Netherlands will be \$49.68 million dollars in 2022 and the value added amount for the market will be \$70.96 million dollars. The cost of resales for this equipment is expected to reach \$4.06 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	49,681.58
Cost of resales (\$1,000)	4,061.69
Cost of purchased fuels consumed (\$1,000)	1,583.42
Cost of purchased electricity (\$1,000)	1,508.81
Cost of contract work (\$1,000)	682.68
Value of resales (\$1,000)	5,245.77
Value added (\$1,000)	70,963.80

Capital Expenses Estimates

The total capital expenses for this market in Netherlands will be \$5.86 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$4.88 million dollars. The expenditures for buildings for this equipment expected to reach \$0.99 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	5,864.36
Capital expenditures for buildings and other structures (\$1,000)	987.34
Capital expenditures for machinery and equipment (\$1,000)	4,877.03
Capital expenditures for automobiles, trucks, etc. (\$1,000)	62.03
Capital expenditures for computers and peripheral equip. (\$1,000)	130.00
Capital expenditures for all other machinery and equip. (\$1,000)	4,685.00

*2021-2022 Forecasts

Source: Barnes Reports

Nigeria

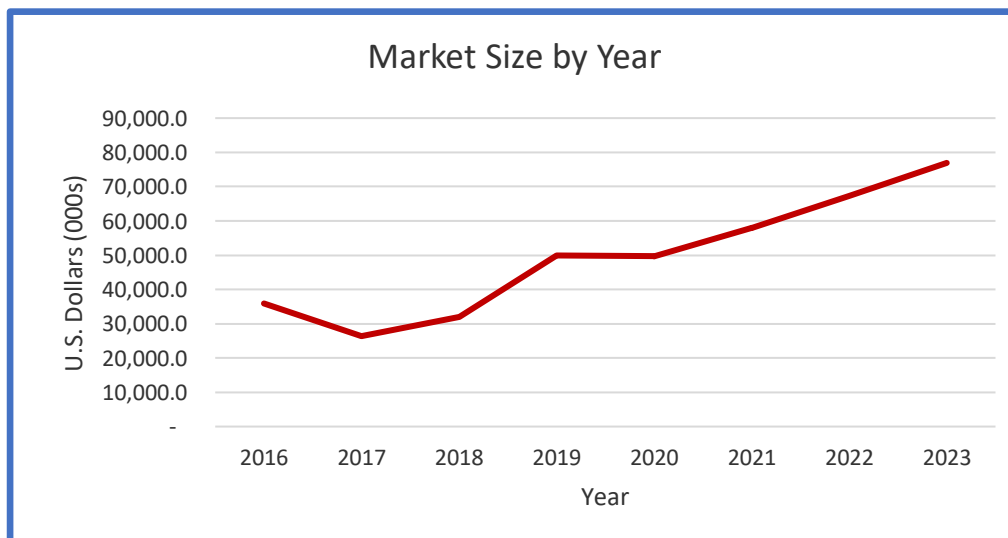
Equipment Type: Inkjet inks

The market for this equipment in Nigeria is estimated to be \$67.2 million dollars in 2022 and is expected to change by 14.5 percent from 2022 to 2023. The market will be 29592.8 million Nairas in 2022 and is forecast to change by 27.6 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Nairas
2016	35,988.9	7,466,180.7
2017	26,388.2	8,069,255.9
2018	31,935.0	10,353,586.8
2019	49,879.9	16,210,976.0
2020	49,667.4	18,054,989.9
2021	57,965.6	23,191,730.2
2022	67,213.0	29,592,812.1
2023	76,931.7	37,266,622.7
2028	117,785.8	107,240,003.8
Y-to-Y Change	US Dollars	Nairas
2016-2017	-26.7%	8.1%
2017-2018	21.0%	28.3%
2018-2019	56.2%	56.6%
2019-2020	-0.4%	11.4%
2020-2021	16.7%	28.5%
2021-2022	16.0%	27.6%
2022-2023	14.5%	25.9%
CAGR 2023-2028	10.6%	187.8%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Nigeria

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Nigeria will be \$26.05 million dollars in 2022 and the value added amount for the market will be \$37.20 million dollars. The cost of resales for this equipment is expected to reach \$2.13 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	26,045.45
Cost of resales (\$1,000)	2,129.33
Cost of purchased fuels consumed (\$1,000)	830.10
Cost of purchased electricity (\$1,000)	790.99
Cost of contract work (\$1,000)	357.89
Value of resales (\$1,000)	2,750.08
Value added (\$1,000)	37,202.61

Capital Expenses Estimates

The total capital expenses for this market in Nigeria will be \$3.07 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$2.56 million dollars. The expenditures for buildings for this equipment expected to reach \$0.52 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	3,074.38
Capital expenditures for buildings and other structures (\$1,000)	517.61
Capital expenditures for machinery and equipment (\$1,000)	2,556.77
Capital expenditures for automobiles, trucks, etc. (\$1,000)	32.52
Capital expenditures for computers and peripheral equip. (\$1,000)	68.15
Capital expenditures for all other machinery and equip. (\$1,000)	2,456.10

*2021-2022 Forecasts

Source: Barnes Reports

Norway

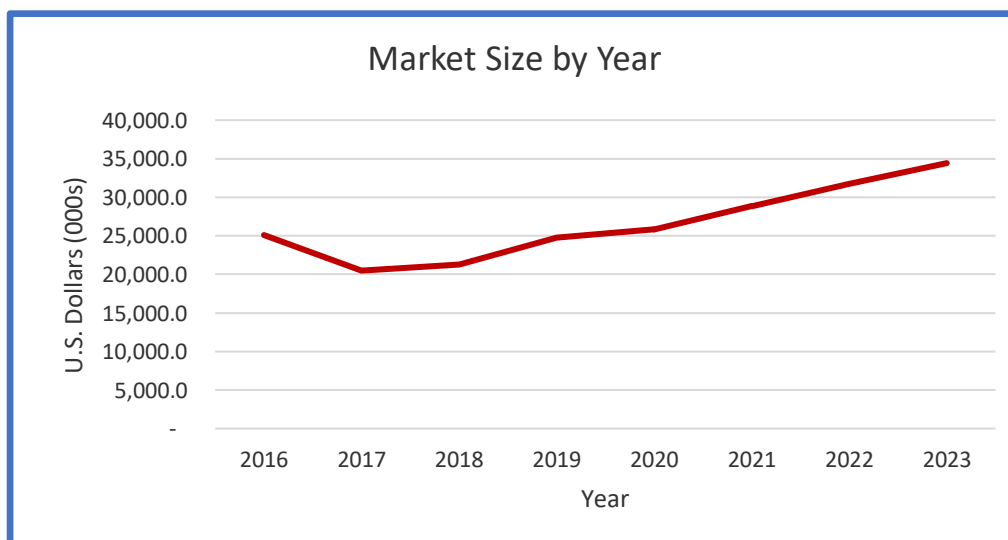
Equipment Type: Inkjet inks

The market for this equipment in Norway is estimated to be \$31.7 million dollars in 2022 and is expected to change by 8.4 percent from 2022 to 2023. The market will be 303.8 million Kroner in 2022 and is forecast to change by 13.7 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Kroner
2016	25,111.5	196,957.8
2017	20,484.5	169,440.6
2018	21,289.3	173,134.9
2019	24,732.6	217,647.1
2020	25,818.3	231,351.6
2021	28,858.6	267,225.7
2022	31,746.1	303,773.9
2023	34,421.2	340,364.6
2028	37,346.0	435,164.3
Y-to-Y Change	US Dollars	Kroner
2016-2017	-18.4%	-14.0%
2017-2018	3.9%	2.2%
2018-2019	16.2%	25.7%
2019-2020	4.4%	6.3%
2020-2021	11.8%	15.5%
2021-2022	10.0%	13.7%
2022-2023	8.4%	12.0%
CAGR 2023-2028	1.7%	27.9%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Norway

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Norway will be \$12.30 million dollars in 2022 and the value added amount for the market will be \$17.57 million dollars. The cost of resales for this equipment is expected to reach \$1.01 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	12,301.78
Cost of resales (\$1,000)	1,005.73
Cost of purchased fuels consumed (\$1,000)	392.07
Cost of purchased electricity (\$1,000)	373.60
Cost of contract work (\$1,000)	169.04
Value of resales (\$1,000)	1,298.92
Value added (\$1,000)	17,571.53

Capital Expenses Estimates

The total capital expenses for this market in Norway will be \$1.45 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$1.21 million dollars. The expenditures for buildings for this equipment expected to reach \$0.24 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	1,452.09
Capital expenditures for buildings and other structures (\$1,000)	244.48
Capital expenditures for machinery and equipment (\$1,000)	1,207.61
Capital expenditures for automobiles, trucks, etc. (\$1,000)	15.36
Capital expenditures for computers and peripheral equip. (\$1,000)	32.19
Capital expenditures for all other machinery and equip. (\$1,000)	1,160.06

*2021-2022 Forecasts

Source: Barnes Reports

Pakistan

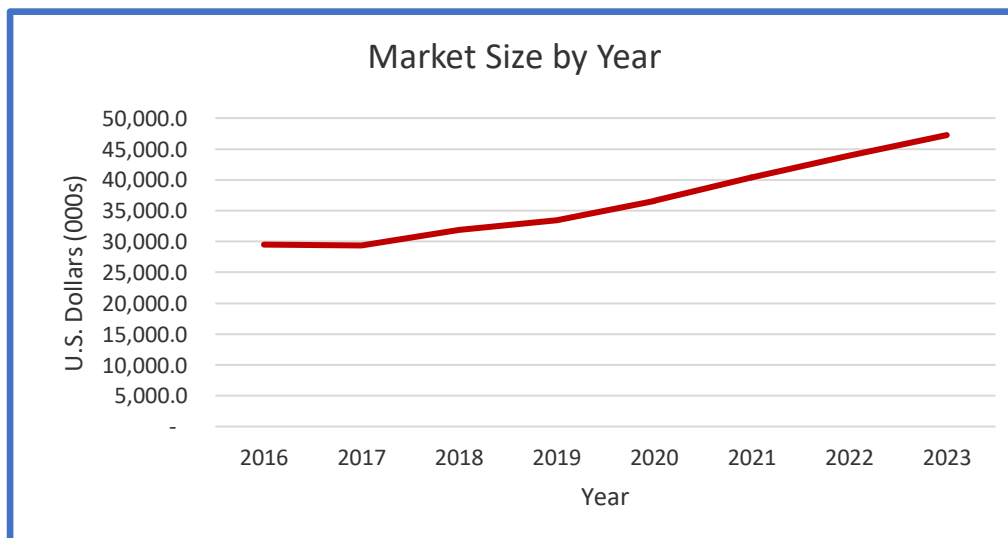
Equipment Type: Inkjet inks

The market for this equipment in Pakistan is estimated to be \$44.0 million dollars in 2022 and is expected to change by 7.5 percent from 2022 to 2023. The market will be 7285.2 million Rupees in 2022 and is forecast to change by 18.4 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Rupees
2016	29,538.0	3,091,347.6
2017	29,357.4	3,077,006.8
2018	31,859.3	3,505,926.7
2019	33,480.9	4,569,538.0
2020	36,600.7	5,122,301.0
2021	40,391.3	6,151,370.0
2022	43,959.3	7,285,232.6
2023	47,245.1	8,520,368.7
2028	58,252.8	16,031,003.1
Y-to-Y Change	US Dollars	Rupees
2016-2017	-0.6%	-0.5%
2017-2018	8.5%	13.9%
2018-2019	5.1%	30.3%
2019-2020	9.3%	12.1%
2020-2021	10.4%	20.1%
2021-2022	8.8%	18.4%
2022-2023	7.5%	17.0%
CAGR 2023-2028	4.7%	88.1%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Pakistan

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Pakistan will be \$17.03 million dollars in 2022 and the value added amount for the market will be \$24.33 million dollars. The cost of resales for this equipment is expected to reach \$1.39 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	17,034.48
Cost of resales (\$1,000)	1,392.65
Cost of purchased fuels consumed (\$1,000)	542.91
Cost of purchased electricity (\$1,000)	517.33
Cost of contract work (\$1,000)	234.07
Value of resales (\$1,000)	1,798.63
Value added (\$1,000)	24,331.58

Capital Expenses Estimates

The total capital expenses for this market in Pakistan will be \$2.01 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$1.67 million dollars. The expenditures for buildings for this equipment expected to reach \$0.34 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	2,010.73
Capital expenditures for buildings and other structures (\$1,000)	338.53
Capital expenditures for machinery and equipment (\$1,000)	1,672.20
Capital expenditures for automobiles, trucks, etc. (\$1,000)	21.27
Capital expenditures for computers and peripheral equip. (\$1,000)	44.57
Capital expenditures for all other machinery and equip. (\$1,000)	1,606.36

*2021-2022 Forecasts

Source: Barnes Reports

Philippines

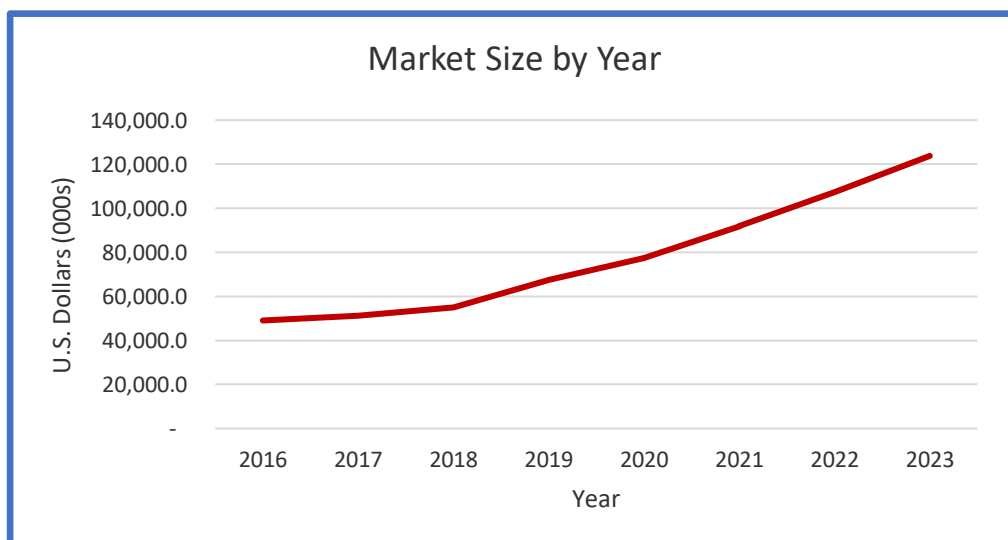
Equipment Type: Inkjet inks

The market for this equipment in Philippines is estimated to be \$107.2 million dollars in 2022 and is expected to change by 15.4 percent from 2022 to 2023. The market will be 6183 million Pesos in 2022 and is forecast to change by 20.6 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Pesos
2016	49,051.3	2,360,475.5
2017	51,339.1	2,470,607.7
2018	55,062.2	2,899,655.5
2019	67,403.9	3,491,240.5
2020	77,417.3	4,194,735.5
2021	91,749.6	5,128,235.1
2022	107,234.6	6,182,955.2
2023	123,768.2	7,361,522.8
2028	217,975.3	15,144,430.8
Y-to-Y Change	US Dollars	Pesos
2016-2017	4.7%	4.7%
2017-2018	7.3%	17.4%
2018-2019	22.4%	20.4%
2019-2020	14.9%	20.2%
2020-2021	18.5%	22.3%
2021-2022	16.9%	20.6%
2022-2023	15.4%	19.1%
CAGR 2023-2028	15.2%	105.7%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Philippines

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Philippines will be \$41.55 million dollars in 2022 and the value added amount for the market will be \$59.35 million dollars. The cost of resales for this equipment is expected to reach \$3.40 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	41,554.03
Cost of resales (\$1,000)	3,397.23
Cost of purchased fuels consumed (\$1,000)	1,324.38
Cost of purchased electricity (\$1,000)	1,261.98
Cost of contract work (\$1,000)	571.00
Value of resales (\$1,000)	4,387.60
Value added (\$1,000)	59,354.64

Capital Expenses Estimates

The total capital expenses for this market in Philippines will be \$4.90 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$4.08 million dollars. The expenditures for buildings for this equipment expected to reach \$0.83 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	4,905.00
Capital expenditures for buildings and other structures (\$1,000)	825.82
Capital expenditures for machinery and equipment (\$1,000)	4,079.18
Capital expenditures for automobiles, trucks, etc. (\$1,000)	51.88
Capital expenditures for computers and peripheral equip. (\$1,000)	108.73
Capital expenditures for all other machinery and equip. (\$1,000)	3,918.56

*2021-2022 Forecasts

Source: Barnes Reports

Poland

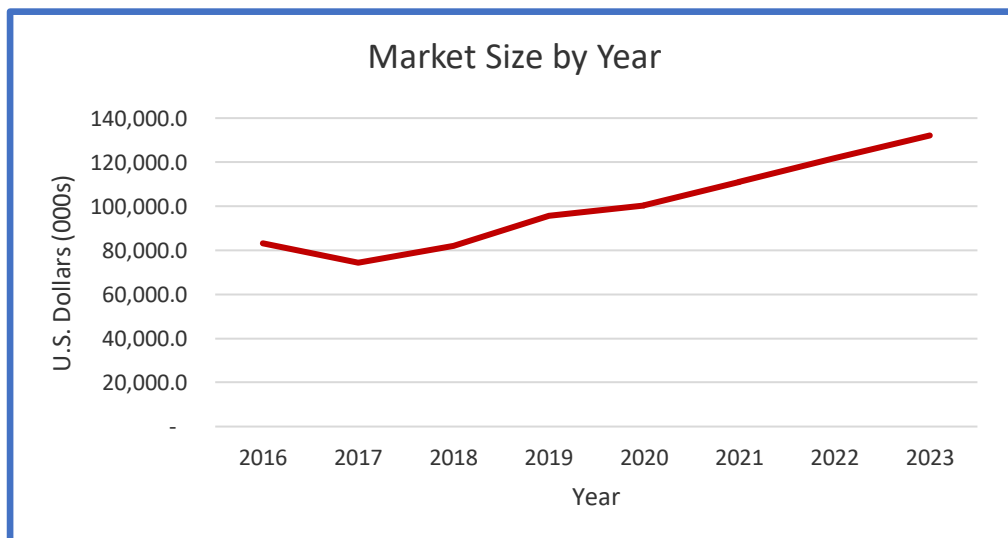
Equipment Type: Inkjet inks

The market for this equipment in Poland is estimated to be \$121.9 million dollars in 2022 and is expected to change by 8.4 percent from 2022 to 2023. The market will be 503.3 million Zlotys in 2022 and is forecast to change by 12.2 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Zlotys
2016	83,127.2	314,960.6
2017	74,382.5	281,026.2
2018	81,915.9	295,855.6
2019	95,777.6	367,726.2
2020	100,427.6	394,170.4
2021	111,016.7	448,498.4
2022	121,910.3	503,271.8
2023	132,121.5	557,683.4
2028	179,476.2	801,199.9
Y-to-Y Change	US Dollars	Zlotys
2016-2017	-10.5%	-10.8%
2017-2018	10.1%	5.3%
2018-2019	16.9%	24.3%
2019-2020	4.9%	7.2%
2020-2021	10.5%	13.8%
2021-2022	9.8%	12.2%
2022-2023	8.4%	10.8%
CAGR 2023-2028	7.2%	43.7%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Poland

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Poland will be \$47.24 million dollars in 2022 and the value added amount for the market will be \$67.48 million dollars. The cost of resales for this equipment is expected to reach \$3.86 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	47,240.98
Cost of resales (\$1,000)	3,862.16
Cost of purchased fuels consumed (\$1,000)	1,505.63
Cost of purchased electricity (\$1,000)	1,434.69
Cost of contract work (\$1,000)	649.14
Value of resales (\$1,000)	4,988.07
Value added (\$1,000)	67,477.72

Capital Expenses Estimates

The total capital expenses for this market in Poland will be \$5.58 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$4.64 million dollars. The expenditures for buildings for this equipment expected to reach \$0.94 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	5,576.28
Capital expenditures for buildings and other structures (\$1,000)	938.83
Capital expenditures for machinery and equipment (\$1,000)	4,637.44
Capital expenditures for automobiles, trucks, etc. (\$1,000)	58.98
Capital expenditures for computers and peripheral equip. (\$1,000)	123.62
Capital expenditures for all other machinery and equip. (\$1,000)	4,454.85

*2021-2022 Forecasts

Source: Barnes Reports

Puerto Rico

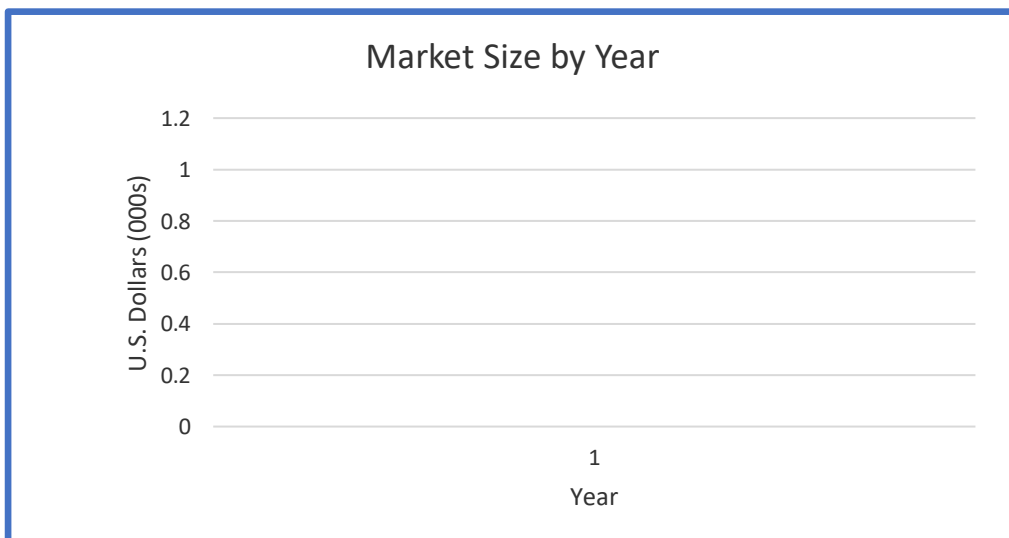
Equipment Type: Inkjet inks

The market for this equipment in Puerto Rico is estimated to be \$62.7 million dollars in 2022 and is expected to change by 8.8 percent from 2022 to 2023. The market will be 63.2 million Dollars in 2022 and is forecast to change by 10.4 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Dollars
2016	41,590.2	41,207.2
2017	40,195.3	40,508.0
2018	39,762.4	39,762.4
2019	47,896.7	47,896.7
2020	50,952.6	51,188.9
2021	56,910.2	57,288.6
2022	62,687.1	63,230.4
2023	68,188.3	68,917.0
2028	89,288.6	91,150.3
Y-to-Y Change	US Dollars	Dollars
2016-2017	-3.4%	-1.7%
2017-2018	-1.1%	-1.8%
2018-2019	20.5%	20.5%
2019-2020	6.4%	6.9%
2020-2021	11.7%	11.9%
2021-2022	10.2%	10.4%
2022-2023	8.8%	9.0%
CAGR 2023-2028	6.2%	32.3%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Puerto Rico

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Puerto Rico will be \$24.29 million dollars in 2022 and the value added amount for the market will be \$34.70 million dollars. The cost of resales for this equipment is expected to reach \$1.99 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	24,291.64
Cost of resales (\$1,000)	1,985.95
Cost of purchased fuels consumed (\$1,000)	774.21
Cost of purchased electricity (\$1,000)	737.73
Cost of contract work (\$1,000)	333.79
Value of resales (\$1,000)	2,564.90
Value added (\$1,000)	34,697.51

Capital Expenses Estimates

The total capital expenses for this market in Puerto Rico will be \$2.87 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$2.38 million dollars. The expenditures for buildings for this equipment expected to reach \$0.48 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	2,867.36
Capital expenditures for buildings and other structures (\$1,000)	482.75
Capital expenditures for machinery and equipment (\$1,000)	2,384.61
Capital expenditures for automobiles, trucks, etc. (\$1,000)	30.33
Capital expenditures for computers and peripheral equip. (\$1,000)	63.56
Capital expenditures for all other machinery and equip. (\$1,000)	2,290.71

*2021-2022 Forecasts

Source: Barnes Reports

Romania

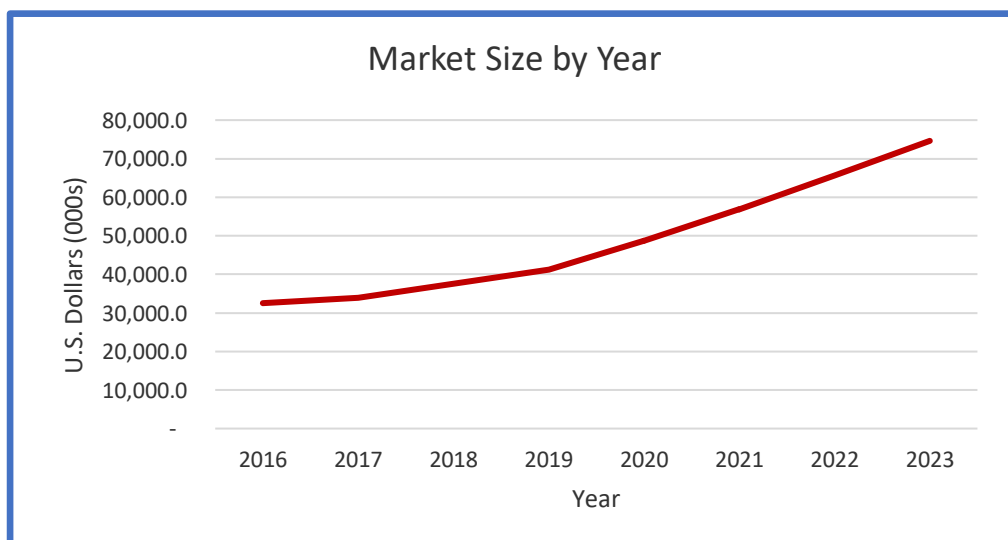
Equipment Type: Inkjet inks

The market for this equipment in Romania is estimated to be \$65.6 million dollars in 2022 and is expected to change by 13.8 percent from 2022 to 2023. The market will be 271.7 million Leus in 2022 and is forecast to change by 15.5 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Leus
2016	32,529.1	135,461.1
2017	33,905.4	137,401.5
2018	37,575.5	148,107.7
2019	41,239.5	174,768.7
2020	48,699.4	200,788.7
2021	56,903.2	235,195.5
2022	65,571.3	271,696.2
2023	74,616.4	309,942.8
2028	122,423.6	514,871.2
Y-to-Y Change	US Dollars	Leus
2016-2017	4.2%	1.4%
2017-2018	10.8%	7.8%
2018-2019	9.8%	18.0%
2019-2020	18.1%	14.9%
2020-2021	16.8%	17.1%
2021-2022	15.2%	15.5%
2022-2023	13.8%	14.1%
CAGR 2023-2028	12.8%	66.1%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Romania

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Romania will be \$25.41 million dollars in 2022 and the value added amount for the market will be \$36.29 million dollars. The cost of resales for this equipment is expected to reach \$2.08 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	25,409.26
Cost of resales (\$1,000)	2,077.32
Cost of purchased fuels consumed (\$1,000)	809.83
Cost of purchased electricity (\$1,000)	771.67
Cost of contract work (\$1,000)	349.15
Value of resales (\$1,000)	2,682.91
Value added (\$1,000)	36,293.89

Capital Expenses Estimates

The total capital expenses for this market in Romania will be \$3.00 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$2.49 million dollars. The expenditures for buildings for this equipment expected to reach \$0.50 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	2,999.28
Capital expenditures for buildings and other structures (\$1,000)	504.97
Capital expenditures for machinery and equipment (\$1,000)	2,494.32
Capital expenditures for automobiles, trucks, etc. (\$1,000)	31.72
Capital expenditures for computers and peripheral equip. (\$1,000)	66.49
Capital expenditures for all other machinery and equip. (\$1,000)	2,396.10

*2021-2022 Forecasts

Source: Barnes Reports

Russia

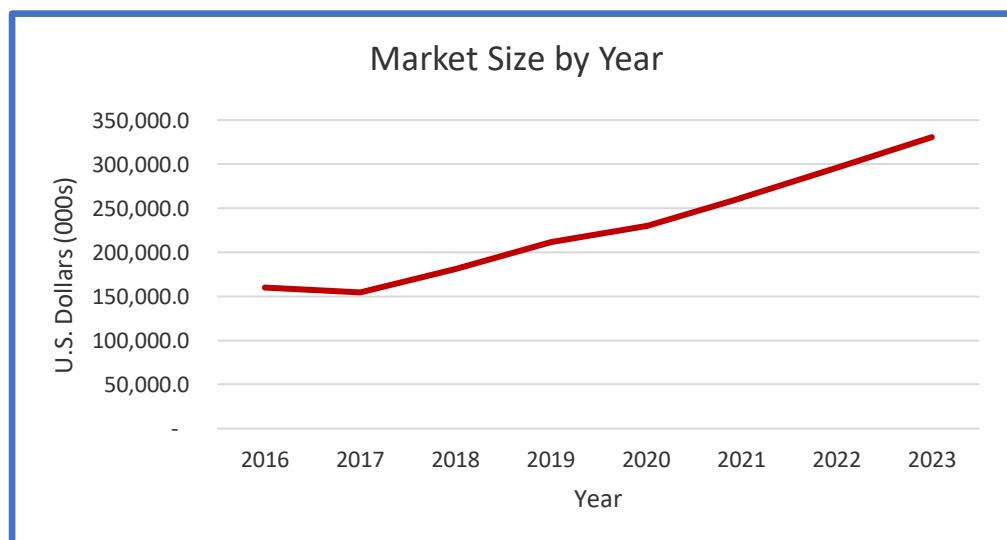
Equipment Type: Inkjet inks

The market for this equipment in Russia is estimated to be \$296.0 million dollars in 2022 and is expected to change by 11.7 percent from 2022 to 2023. The market will be 20300.6 million Rubles in 2022 and is forecast to change by 15.8 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Rubles
2016	159,832.3	9,796,413.6
2017	154,508.4	9,039,792.0
2018	180,815.2	11,331,342.9
2019	211,774.6	13,709,802.8
2020	229,579.8	15,028,408.7
2021	261,555.1	17,524,791.1
2022	296,012.3	20,300,647.6
2023	330,626.1	23,208,530.7
2028	522,205.6	41,181,693.6
Y-to-Y Change	US Dollars	Rubles
2016-2017	-3.3%	-7.7%
2017-2018	17.0%	25.3%
2018-2019	17.1%	21.0%
2019-2020	8.4%	9.6%
2020-2021	13.9%	16.6%
2021-2022	13.2%	15.8%
2022-2023	11.7%	14.3%
CAGR 2023-2028	11.6%	77.4%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Russia

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Russia will be \$114.71 million dollars in 2022 and the value added amount for the market will be \$163.84 million dollars. The cost of resales for this equipment is expected to reach \$9.38 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	114,706.53
Cost of resales (\$1,000)	9,377.77
Cost of purchased fuels consumed (\$1,000)	3,655.85
Cost of purchased electricity (\$1,000)	3,483.59
Cost of contract work (\$1,000)	1,576.20
Value of resales (\$1,000)	12,111.62
Value added (\$1,000)	163,843.66

Capital Expenses Estimates

The total capital expenses for this market in Russia will be \$13.54 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$11.26 million dollars. The expenditures for buildings for this equipment expected to reach \$2.28 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	13,539.84
Capital expenditures for buildings and other structures (\$1,000)	2,279.60
Capital expenditures for machinery and equipment (\$1,000)	11,260.25
Capital expenditures for automobiles, trucks, etc. (\$1,000)	143.22
Capital expenditures for computers and peripheral equip. (\$1,000)	300.15
Capital expenditures for all other machinery and equip. (\$1,000)	10,816.88

*2021-2022 Forecasts

Source: Barnes Reports

Saudi Arabia

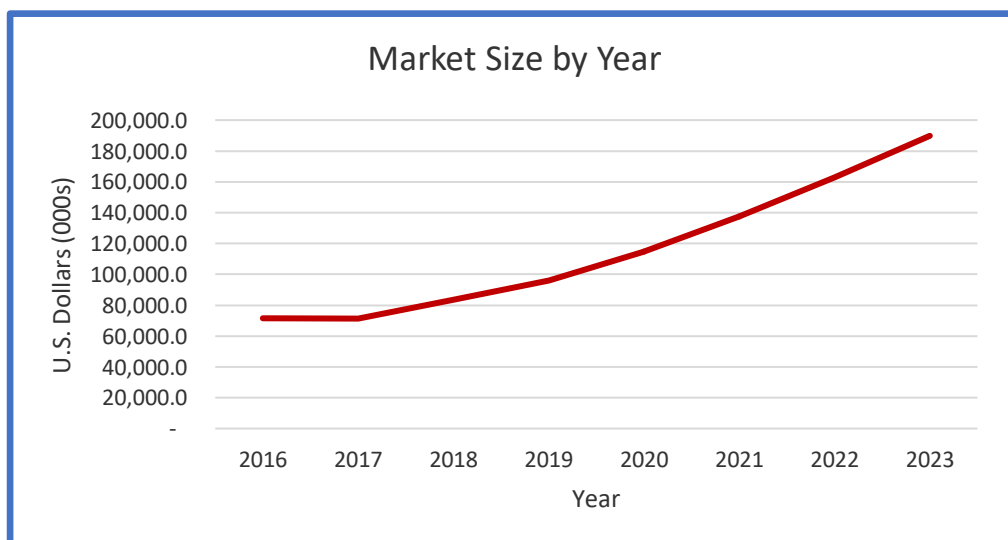
Equipment Type: Inkjet inks

The market for this equipment in Saudi Arabia is estimated to be \$162.6 million dollars in 2022 and is expected to change by 16.7 percent from 2022 to 2023. The market will be 634.1 million Riyals in 2022 and is forecast to change by 19.5 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Riyals
2016	71,525.7	258,836.7
2017	71,316.5	267,436.9
2018	83,746.5	314,049.2
2019	96,060.1	360,225.5
2020	114,760.0	438,082.2
2021	137,556.0	530,743.7
2022	162,604.8	634,130.8
2023	189,814.9	748,197.4
2028	353,788.3	1,471,060.7
Y-to-Y Change	US Dollars	Riyals
2016-2017	-0.3%	3.3%
2017-2018	17.4%	17.4%
2018-2019	14.7%	14.7%
2019-2020	19.5%	21.6%
2020-2021	19.9%	21.2%
2021-2022	18.2%	19.5%
2022-2023	16.7%	18.0%
CAGR 2023-2028	17.3%	96.6%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Saudi Arabia

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Saudi Arabia will be \$63.01 million dollars in 2022 and the value added amount for the market will be \$90.00 million dollars. The cost of resales for this equipment is expected to reach \$5.15 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	63,010.31
Cost of resales (\$1,000)	5,151.38
Cost of purchased fuels consumed (\$1,000)	2,008.22
Cost of purchased electricity (\$1,000)	1,913.60
Cost of contract work (\$1,000)	865.83
Value of resales (\$1,000)	6,653.12
Value added (\$1,000)	90,002.20

Capital Expenses Estimates

The total capital expenses for this market in Saudi Arabia will be \$7.44 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$6.19 million dollars. The expenditures for buildings for this equipment expected to reach \$1.25 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	7,437.67
Capital expenditures for buildings and other structures (\$1,000)	1,252.22
Capital expenditures for machinery and equipment (\$1,000)	6,185.45
Capital expenditures for automobiles, trucks, etc. (\$1,000)	78.67
Capital expenditures for computers and peripheral equip. (\$1,000)	164.88
Capital expenditures for all other machinery and equip. (\$1,000)	5,941.90

*2021-2022 Forecasts

Source: Barnes Reports

Singapore

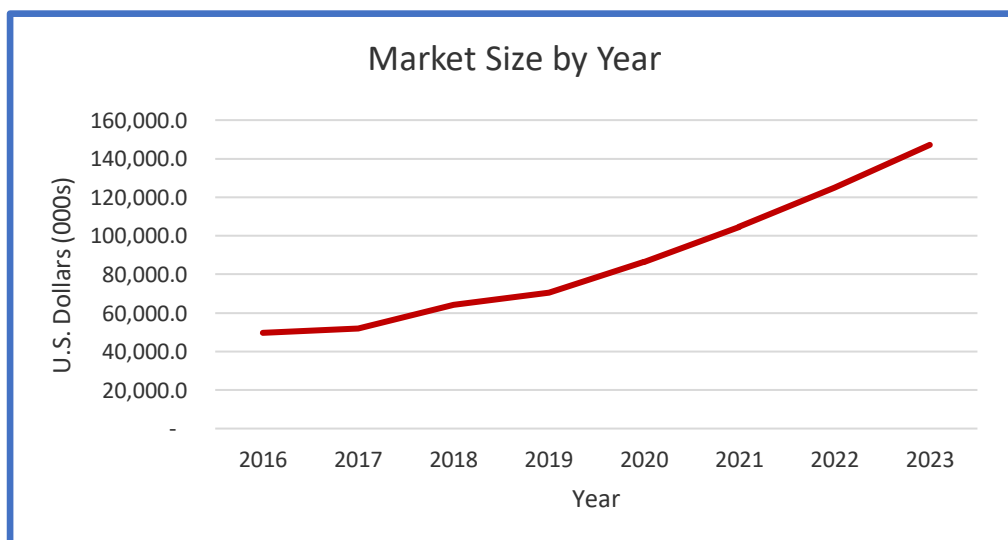
Equipment Type: Inkjet inks

The market for this equipment in Singapore is estimated to be \$124.8 million dollars in 2022 and is expected to change by 17.9 percent from 2022 to 2023. The market will be 171.6 million Dollars in 2022 and is forecast to change by 19.7 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Dollars
2016	49,657.4	66,776.5
2017	51,826.5	70,843.5
2018	64,347.1	86,791.4
2019	70,360.1	95,985.2
2020	86,374.6	118,009.8
2021	104,560.9	143,282.4
2022	124,829.6	171,566.5
2023	147,166.5	202,868.9
2028	288,200.1	403,234.6
Y-to-Y Change	US Dollars	Dollars
2016-2017	4.4%	6.1%
2017-2018	24.2%	22.5%
2018-2019	9.3%	10.6%
2019-2020	22.8%	22.9%
2020-2021	21.1%	21.4%
2021-2022	19.4%	19.7%
2022-2023	17.9%	18.2%
CAGR 2023-2028	19.2%	98.8%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Singapore

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Singapore will be \$48.37 million dollars in 2022 and the value added amount for the market will be \$69.09 million dollars. The cost of resales for this equipment is expected to reach \$3.95 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	48,372.19
Cost of resales (\$1,000)	3,954.64
Cost of purchased fuels consumed (\$1,000)	1,541.69
Cost of purchased electricity (\$1,000)	1,469.04
Cost of contract work (\$1,000)	664.69
Value of resales (\$1,000)	5,107.52
Value added (\$1,000)	69,093.51

Capital Expenses Estimates

The total capital expenses for this market in Singapore will be \$5.71 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$4.75 million dollars. The expenditures for buildings for this equipment expected to reach \$0.96 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	5,709.80
Capital expenditures for buildings and other structures (\$1,000)	961.31
Capital expenditures for machinery and equipment (\$1,000)	4,748.49
Capital expenditures for automobiles, trucks, etc. (\$1,000)	60.39
Capital expenditures for computers and peripheral equip. (\$1,000)	126.58
Capital expenditures for all other machinery and equip. (\$1,000)	4,561.52

*2021-2022 Forecasts

Source: Barnes Reports

South Africa

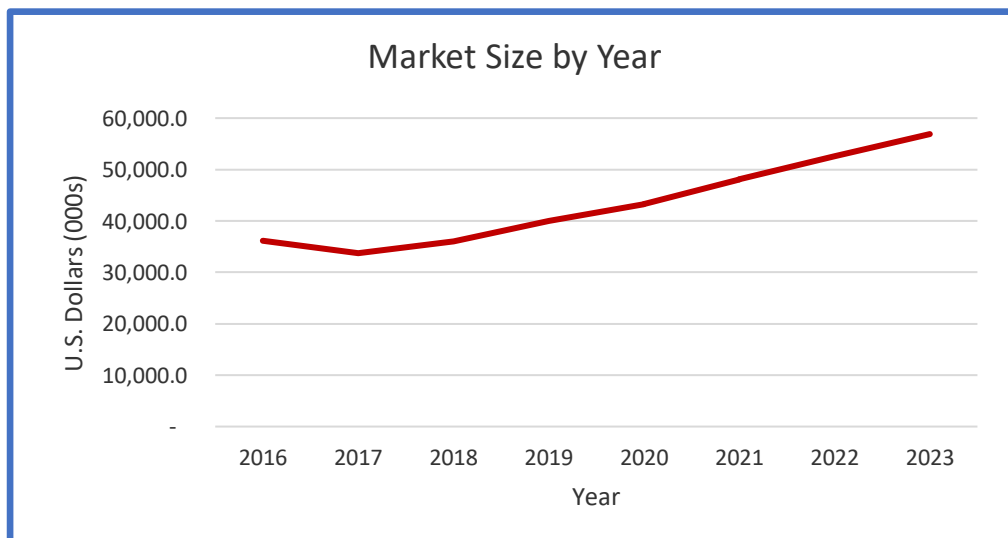
Equipment Type: Inkjet inks

The market for this equipment in South Africa is estimated to be \$52.6 million dollars in 2022 and is expected to change by 8.1 percent from 2022 to 2023. The market will be 795.2 million Rands in 2022 and is forecast to change by 12.1 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Rands
2016	36,138.0	481,095.3
2017	33,729.6	449,039.3
2018	35,987.0	476,249.0
2019	39,994.0	577,849.9
2020	43,282.0	623,501.5
2021	48,054.0	709,034.7
2022	52,615.9	795,174.3
2023	56,891.5	880,644.2
2028	72,298.4	1,261,592.1
Y-to-Y Change	US Dollars	Rands
2016-2017	-6.7%	-6.7%
2017-2018	6.7%	6.1%
2018-2019	11.1%	21.3%
2019-2020	8.2%	7.9%
2020-2021	11.0%	13.7%
2021-2022	9.5%	12.1%
2022-2023	8.1%	10.7%
CAGR 2023-2028	5.4%	43.3%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



South Africa

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in South Africa will be \$20.39 million dollars in 2022 and the value added amount for the market will be \$29.12 million dollars. The cost of resales for this equipment is expected to reach \$1.67 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	20,388.96
Cost of resales (\$1,000)	1,666.89
Cost of purchased fuels consumed (\$1,000)	649.82
Cost of purchased electricity (\$1,000)	619.20
Cost of contract work (\$1,000)	280.17
Value of resales (\$1,000)	2,152.83
Value added (\$1,000)	29,123.04

Capital Expenses Estimates

The total capital expenses for this market in South Africa will be \$2.41 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$2.00 million dollars. The expenditures for buildings for this equipment expected to reach \$0.41 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	2,406.69
Capital expenditures for buildings and other structures (\$1,000)	405.20
Capital expenditures for machinery and equipment (\$1,000)	2,001.50
Capital expenditures for automobiles, trucks, etc. (\$1,000)	25.46
Capital expenditures for computers and peripheral equip. (\$1,000)	53.35
Capital expenditures for all other machinery and equip. (\$1,000)	1,922.69

*2021-2022 Forecasts

Source: Barnes Reports

Spain

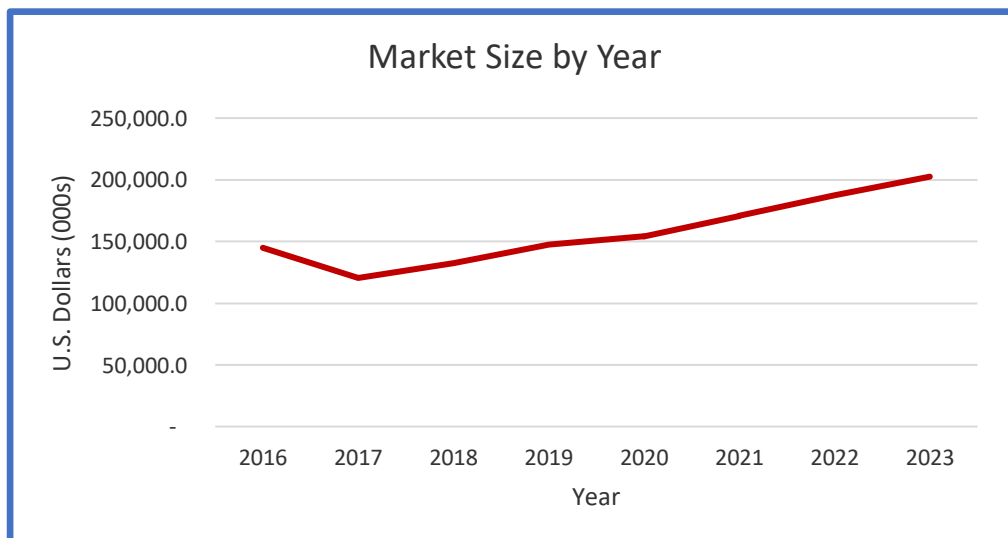
Equipment Type: Inkjet inks

The market for this equipment in Spain is estimated to be \$187.3 million dollars in 2022 and is expected to change by 8.1 percent from 2022 to 2023. The market will be 174.7 million Euros in 2022 and is forecast to change by 11.2 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Euros
2016	144,955.2	131,700.9
2017	120,447.6	106,620.9
2018	132,564.6	112,252.1
2019	147,358.6	131,631.9
2020	154,072.6	139,119.5
2021	170,615.0	157,150.3
2022	187,295.7	174,706.4
2023	202,533.8	191,436.2
2028	229,100.0	218,947.3
Y-to-Y Change	US Dollars	Euros
2016-2017	-16.9%	-19.0%
2017-2018	10.1%	5.3%
2018-2019	11.2%	17.3%
2019-2020	4.6%	5.7%
2020-2021	10.7%	13.0%
2021-2022	9.8%	11.2%
2022-2023	8.1%	9.6%
CAGR 2023-2028	2.6%	14.4%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Spain

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Spain will be \$72.58 million dollars in 2022 and the value added amount for the market will be \$103.67 million dollars. The cost of resales for this equipment is expected to reach \$5.93 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	72,578.19
Cost of resales (\$1,000)	5,933.59
Cost of purchased fuels consumed (\$1,000)	2,313.16
Cost of purchased electricity (\$1,000)	2,204.17
Cost of contract work (\$1,000)	997.31
Value of resales (\$1,000)	7,663.38
Value added (\$1,000)	103,668.69

Capital Expenses Estimates

The total capital expenses for this market in Spain will be \$8.57 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$7.12 million dollars. The expenditures for buildings for this equipment expected to reach \$1.44 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	8,567.06
Capital expenditures for buildings and other structures (\$1,000)	1,442.37
Capital expenditures for machinery and equipment (\$1,000)	7,124.69
Capital expenditures for automobiles, trucks, etc. (\$1,000)	90.62
Capital expenditures for computers and peripheral equip. (\$1,000)	189.92
Capital expenditures for all other machinery and equip. (\$1,000)	6,844.16

*2021-2022 Forecasts

Source: Barnes Reports

Sweden

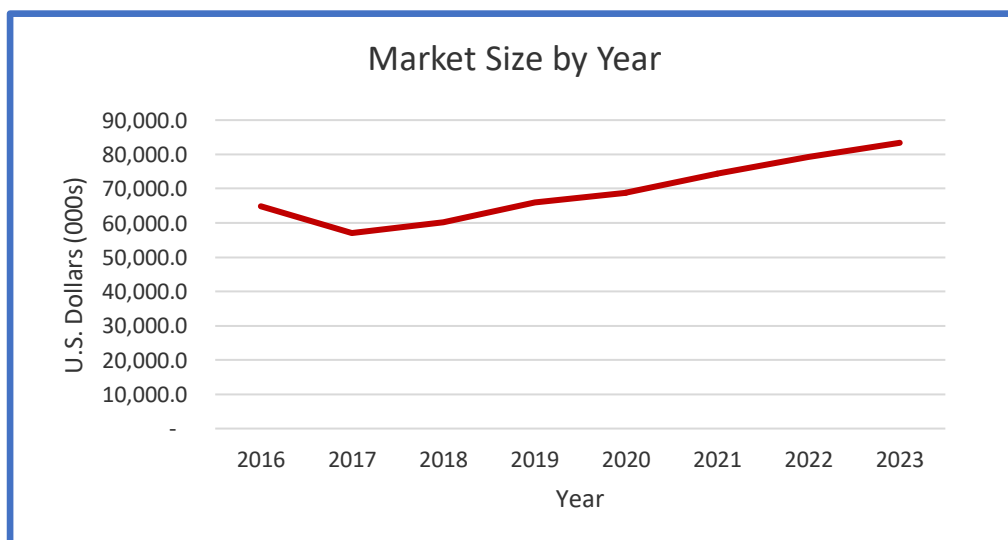
Equipment Type: Inkjet inks

The market for this equipment in Sweden is estimated to be \$79.2 million dollars in 2022 and is expected to change by 5.2 percent from 2022 to 2023. The market will be 799.8 million Kronas in 2022 and is forecast to change by 9.8 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Kronas
2016	64,888.2	558,503.0
2017	57,046.9	487,259.5
2018	60,168.7	523,017.3
2019	66,037.8	624,608.5
2020	68,832.4	654,261.6
2021	74,367.5	728,434.0
2022	79,238.9	799,822.8
2023	83,375.2	867,242.8
2028	92,460.7	1,117,642.8
Y-to-Y Change	US Dollars	Kronas
2016-2017	-12.1%	-12.8%
2017-2018	5.5%	7.3%
2018-2019	9.8%	19.4%
2019-2020	4.2%	4.7%
2020-2021	8.0%	11.3%
2021-2022	6.6%	9.8%
2022-2023	5.2%	8.4%
CAGR 2023-2028	2.2%	28.9%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Sweden

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Sweden will be \$30.71 million dollars in 2022 and the value added amount for the market will be \$43.86 million dollars. The cost of resales for this equipment is expected to reach \$2.51 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	30,705.55
Cost of resales (\$1,000)	2,510.32
Cost of purchased fuels consumed (\$1,000)	978.63
Cost of purchased electricity (\$1,000)	932.52
Cost of contract work (\$1,000)	421.93
Value of resales (\$1,000)	3,242.13
Value added (\$1,000)	43,858.97

Capital Expenses Estimates

The total capital expenses for this market in Sweden will be \$3.62 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$3.01 million dollars. The expenditures for buildings for this equipment expected to reach \$0.61 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	3,624.45
Capital expenditures for buildings and other structures (\$1,000)	610.22
Capital expenditures for machinery and equipment (\$1,000)	3,014.23
Capital expenditures for automobiles, trucks, etc. (\$1,000)	38.34
Capital expenditures for computers and peripheral equip. (\$1,000)	80.35
Capital expenditures for all other machinery and equip. (\$1,000)	2,895.55

*2021-2022 Forecasts

Source: Barnes Reports

Switzerland

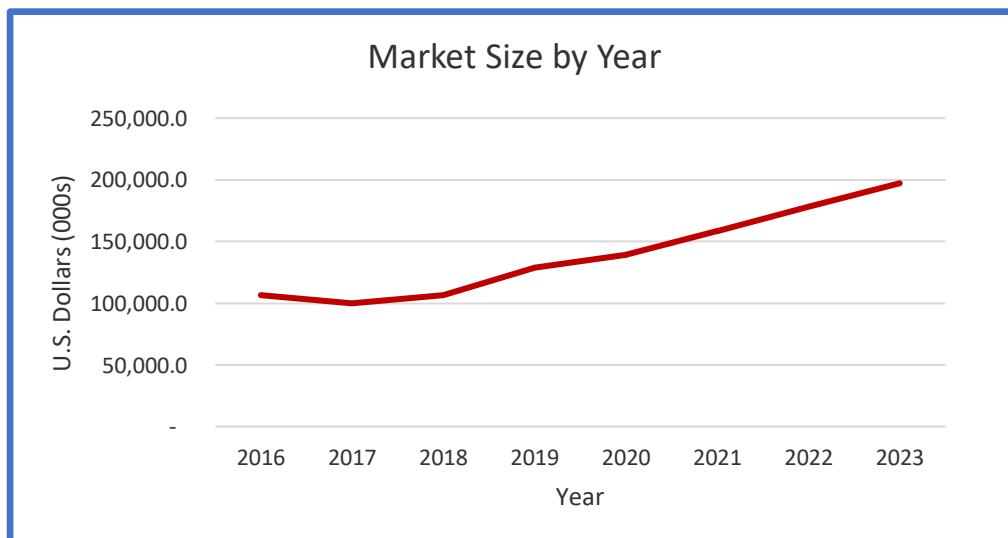
Equipment Type: Inkjet inks

The market for this equipment in Switzerland is estimated to be \$177.9 million dollars in 2022 and is expected to change by 10.8 percent from 2022 to 2023. The market will be 185.4 million Francs in 2022 and is forecast to change by 13.9 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Francs
2016	106,344.6	100,374.4
2017	99,867.9	98,339.1
2018	106,662.4	104,303.4
2019	128,832.9	128,030.9
2020	139,263.1	140,868.6
2021	158,510.5	162,723.0
2022	177,928.2	185,373.9
2023	197,231.0	208,541.0
2028	283,826.8	323,097.9
Y-to-Y Change	US Dollars	Francs
2016-2017	-6.1%	-2.0%
2017-2018	6.8%	6.1%
2018-2019	20.8%	22.7%
2019-2020	8.1%	10.0%
2020-2021	13.8%	15.5%
2021-2022	12.3%	13.9%
2022-2023	10.8%	12.5%
CAGR 2023-2028	8.8%	54.9%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Switzerland

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Switzerland will be \$68.95 million dollars in 2022 and the value added amount for the market will be \$98.48 million dollars. The cost of resales for this equipment is expected to reach \$5.64 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	68,948.25
Cost of resales (\$1,000)	5,636.83
Cost of purchased fuels consumed (\$1,000)	2,197.47
Cost of purchased electricity (\$1,000)	2,093.93
Cost of contract work (\$1,000)	947.43
Value of resales (\$1,000)	7,280.10
Value added (\$1,000)	98,483.79

Capital Expenses Estimates

The total capital expenses for this market in Switzerland will be \$8.14 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$6.77 million dollars. The expenditures for buildings for this equipment expected to reach \$1.37 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	8,138.58
Capital expenditures for buildings and other structures (\$1,000)	1,370.23
Capital expenditures for machinery and equipment (\$1,000)	6,768.35
Capital expenditures for automobiles, trucks, etc. (\$1,000)	86.09
Capital expenditures for computers and peripheral equip. (\$1,000)	180.42
Capital expenditures for all other machinery and equip. (\$1,000)	6,501.85

*2021-2022 Forecasts

Source: Barnes Reports

Thailand

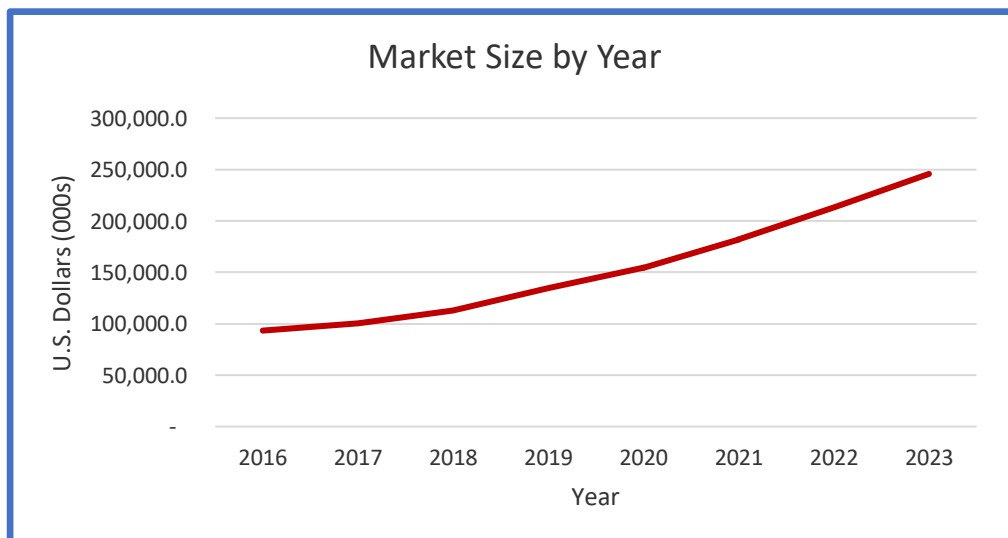
Equipment Type: Inkjet inks

The market for this equipment in Thailand is estimated to be \$212.8 million dollars in 2022 and is expected to change by 15.5 percent from 2022 to 2023. The market will be 6449.8 million Bahts in 2022 and is forecast to change by 14.9 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Bahts
2016	93,349.5	3,268,346.1
2017	100,147.0	3,391,377.6
2018	112,573.3	3,637,265.8
2019	134,746.7	4,183,561.6
2020	154,390.3	4,821,487.7
2021	181,862.3	5,615,409.3
2022	212,805.4	6,449,805.1
2023	245,755.5	7,315,687.7
2028	458,642.1	11,809,335.5
Y-to-Y Change	US Dollars	Bahts
2016-2017	7.3%	3.8%
2017-2018	12.4%	7.3%
2018-2019	19.7%	15.0%
2019-2020	14.6%	15.2%
2020-2021	17.8%	16.5%
2021-2022	17.0%	14.9%
2022-2023	15.5%	13.4%
CAGR 2023-2028	17.3%	61.4%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Thailand

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Thailand will be \$82.46 million dollars in 2022 and the value added amount for the market will be \$117.79 million dollars. The cost of resales for this equipment is expected to reach \$6.74 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	82,463.34
Cost of resales (\$1,000)	6,741.75
Cost of purchased fuels consumed (\$1,000)	2,628.22
Cost of purchased electricity (\$1,000)	2,504.38
Cost of contract work (\$1,000)	1,133.14
Value of resales (\$1,000)	8,707.13
Value added (\$1,000)	117,788.38

Capital Expenses Estimates

The total capital expenses for this market in Thailand will be \$9.73 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$8.10 million dollars. The expenditures for buildings for this equipment expected to reach \$1.64 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	9,733.89
Capital expenditures for buildings and other structures (\$1,000)	1,638.82
Capital expenditures for machinery and equipment (\$1,000)	8,095.07
Capital expenditures for automobiles, trucks, etc. (\$1,000)	102.96
Capital expenditures for computers and peripheral equip. (\$1,000)	215.78
Capital expenditures for all other machinery and equip. (\$1,000)	7,776.33

*2021-2022 Forecasts

Source: Barnes Reports

Turkey

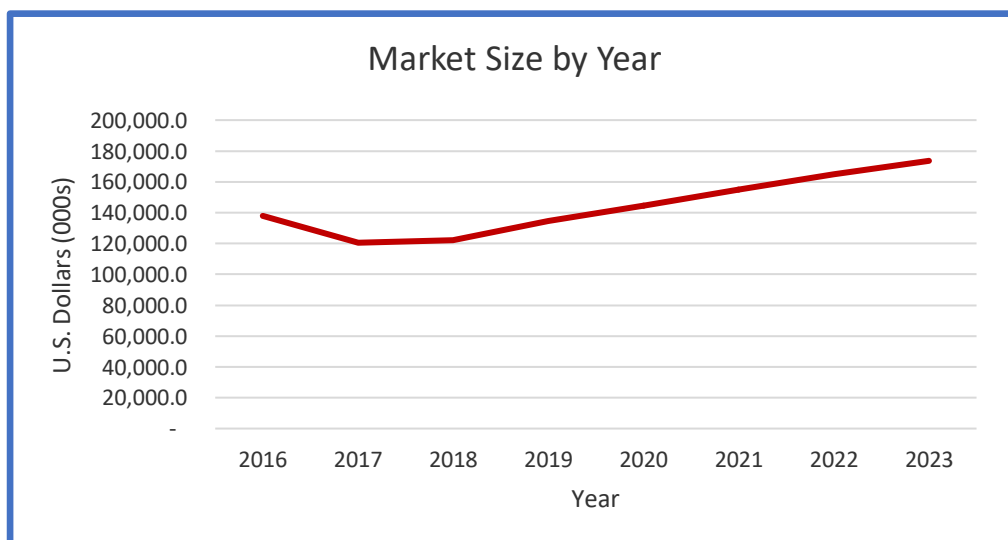
Equipment Type: Inkjet inks

The market for this equipment in Turkey is estimated to be \$165.1 million dollars in 2022 and is expected to change by 5.2 percent from 2022 to 2023. The market will be 1344.8 million Liras in 2022 and is forecast to change by 20.4 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Liras
2016	138,095.5	407,635.1
2017	120,494.8	439,577.2
2018	122,124.1	589,663.9
2019	134,451.0	762,848.2
2020	144,494.7	916,085.6
2021	154,944.7	1,116,692.5
2022	165,076.8	1,344,793.2
2023	173,605.7	1,587,853.4
2028	174,053.1	3,018,730.2
Y-to-Y Change	US Dollars	Liras
2016-2017	-12.7%	7.8%
2017-2018	1.4%	34.1%
2018-2019	10.1%	29.4%
2019-2020	7.5%	20.1%
2020-2021	7.2%	21.9%
2021-2022	6.5%	20.4%
2022-2023	5.2%	18.1%
CAGR 2023-2028	0.1%	90.1%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Turkey

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Turkey will be \$63.97 million dollars in 2022 and the value added amount for the market will be \$91.37 million dollars. The cost of resales for this equipment is expected to reach \$5.23 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	63,968.24
Cost of resales (\$1,000)	5,229.69
Cost of purchased fuels consumed (\$1,000)	2,038.75
Cost of purchased electricity (\$1,000)	1,942.69
Cost of contract work (\$1,000)	879.00
Value of resales (\$1,000)	6,754.27
Value added (\$1,000)	91,370.49

Capital Expenses Estimates

The total capital expenses for this market in Turkey will be \$7.55 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$6.28 million dollars. The expenditures for buildings for this equipment expected to reach \$1.27 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	7,550.75
Capital expenditures for buildings and other structures (\$1,000)	1,271.26
Capital expenditures for machinery and equipment (\$1,000)	6,279.49
Capital expenditures for automobiles, trucks, etc. (\$1,000)	79.87
Capital expenditures for computers and peripheral equip. (\$1,000)	167.39
Capital expenditures for all other machinery and equip. (\$1,000)	6,032.23

*2021-2022 Forecasts

Source: Barnes Reports

United Arab Emirates

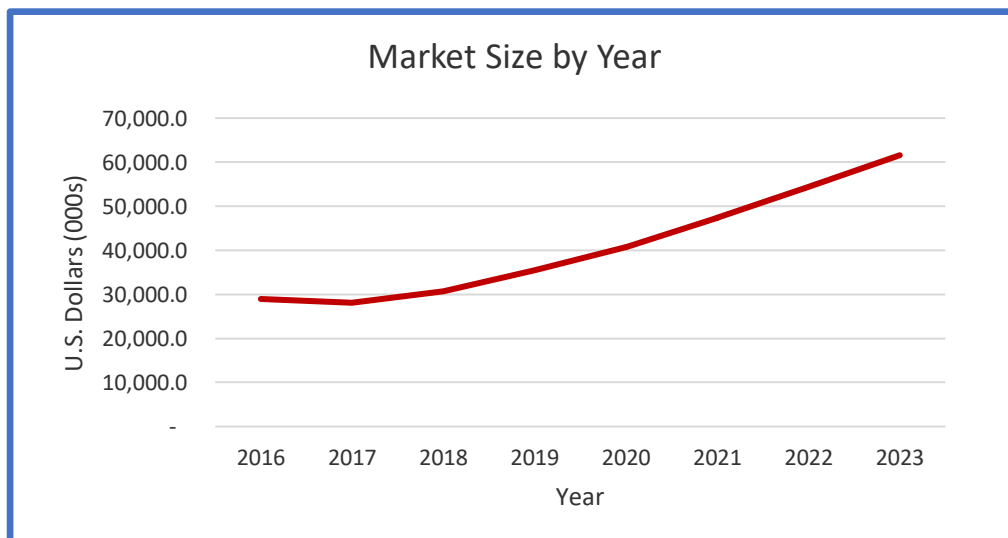
Equipment Type: Inkjet inks

The market for this equipment in United Arab Emirates is estimated to be \$54.3 million dollars in 2022 and is expected to change by 13.3 percent from 2022 to 2023. The market will be 212.6 million Dirhams in 2022 and is forecast to change by 16.8 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Dirhams
2016	28,891.8	100,580.0
2017	28,100.6	101,083.9
2018	30,651.4	112,567.3
2019	35,479.4	130,298.2
2020	40,708.5	153,553.2
2021	47,363.5	181,921.6
2022	54,345.9	212,556.5
2023	61,579.2	245,249.5
2028	98,899.8	431,224.8
Y-to-Y Change	US Dollars	Dirhams
2016-2017	-2.7%	0.5%
2017-2018	9.1%	11.4%
2018-2019	15.8%	15.8%
2019-2020	14.7%	17.8%
2020-2021	16.3%	18.5%
2021-2022	14.7%	16.8%
2022-2023	13.3%	15.4%
CAGR 2023-2028	12.1%	75.8%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



United Arab Emirates

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in United Arab Emirates will be \$21.06 million dollars in 2022 and the value added amount for the market will be \$30.08 million dollars. The cost of resales for this equipment is expected to reach \$1.72 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	21,059.37
Cost of resales (\$1,000)	1,721.70
Cost of purchased fuels consumed (\$1,000)	671.19
Cost of purchased electricity (\$1,000)	639.56
Cost of contract work (\$1,000)	289.38
Value of resales (\$1,000)	2,223.61
Value added (\$1,000)	30,080.62

Capital Expenses Estimates

The total capital expenses for this market in United Arab Emirates will be \$2.49 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$2.07 million dollars. The expenditures for buildings for this equipment expected to reach \$0.42 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	2,485.83
Capital expenditures for buildings and other structures (\$1,000)	418.52
Capital expenditures for machinery and equipment (\$1,000)	2,067.31
Capital expenditures for automobiles, trucks, etc. (\$1,000)	26.29
Capital expenditures for computers and peripheral equip. (\$1,000)	55.11
Capital expenditures for all other machinery and equip. (\$1,000)	1,985.91

*2021-2022 Forecasts

Source: Barnes Reports

United Kingdom

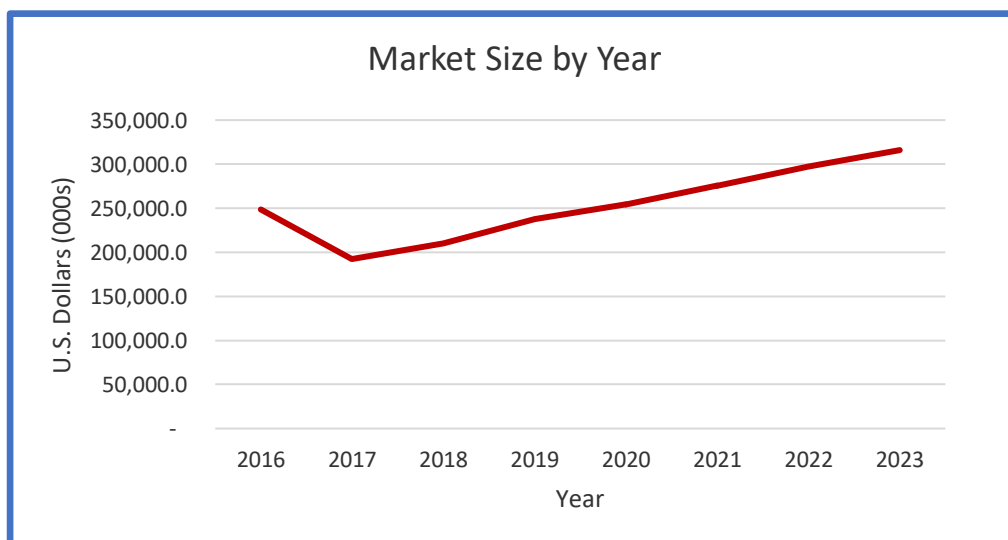
Equipment Type: Inkjet inks

The market for this equipment in United Kingdom is estimated to be \$297.1 million dollars in 2022 and is expected to change by 6.4 percent from 2022 to 2023. The market will be 245.4 million Pounds in 2022 and is forecast to change by 10.4 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Pounds
2016	248,902.9	164,770.2
2017	192,348.9	149,455.6
2018	210,193.7	157,557.4
2019	237,404.3	185,993.2
2020	254,278.6	198,595.7
2021	275,740.9	222,297.1
2022	297,082.7	245,393.2
2023	315,952.5	267,506.7
2028	335,021.6	354,097.3
Y-to-Y Change	US Dollars	Pounds
2016-2017	-22.7%	-9.3%
2017-2018	9.3%	5.4%
2018-2019	12.9%	18.0%
2019-2020	7.1%	6.8%
2020-2021	8.4%	11.9%
2021-2022	7.7%	10.4%
2022-2023	6.4%	9.0%
CAGR 2023-2028	1.2%	32.4%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



United Kingdom

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in United Kingdom will be \$115.12 million dollars in 2022 and the value added amount for the market will be \$164.44 million dollars. The cost of resales for this equipment is expected to reach \$9.41 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	115,121.30
Cost of resales (\$1,000)	9,411.68
Cost of purchased fuels consumed (\$1,000)	3,669.07
Cost of purchased electricity (\$1,000)	3,496.19
Cost of contract work (\$1,000)	1,581.90
Value of resales (\$1,000)	12,155.41
Value added (\$1,000)	164,436.10

Capital Expenses Estimates

The total capital expenses for this market in United Kingdom will be \$13.59 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$11.30 million dollars. The expenditures for buildings for this equipment expected to reach \$2.29 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	13,588.80
Capital expenditures for buildings and other structures (\$1,000)	2,287.84
Capital expenditures for machinery and equipment (\$1,000)	11,300.96
Capital expenditures for automobiles, trucks, etc. (\$1,000)	143.73
Capital expenditures for computers and peripheral equip. (\$1,000)	301.24
Capital expenditures for all other machinery and equip. (\$1,000)	10,855.99

*2021-2022 Forecasts

Source: Barnes Reports

United States

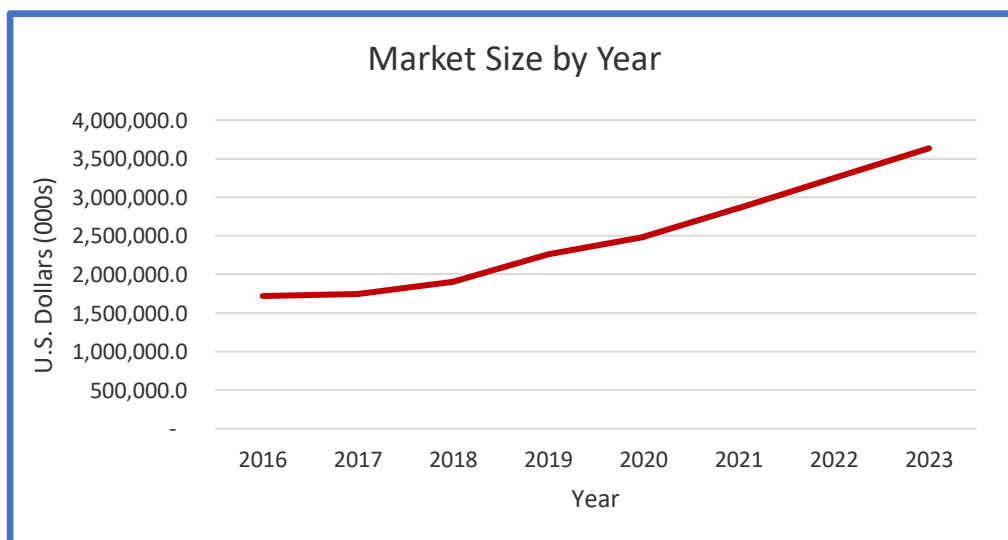
Equipment Type: Inkjet inks

The market for this equipment in United States is estimated to be \$3,244.5 million dollars in 2022 and is expected to change by 12 percent from 2022 to 2023. The market will be 3244.5 million Dollars in 2022 and is forecast to change by 13.4 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Dollars
2016	1,718,720.0	1,718,720.0
2017	1,745,940.0	1,745,940.0
2018	1,903,320.0	1,903,320.0
2019	2,262,290.0	2,262,290.0
2020	2,486,580.0	2,486,580.0
2021	2,860,180.0	2,860,180.0
2022	3,244,510.0	3,244,510.0
2023	3,634,530.0	3,634,530.0
2028	5,512,790.0	5,512,790.0
Y-to-Y Change	US Dollars	Dollars
2016-2017	1.6%	1.6%
2017-2018	9.0%	9.0%
2018-2019	18.9%	18.9%
2019-2020	9.9%	9.9%
2020-2021	15.0%	15.0%
2021-2022	13.4%	13.4%
2022-2023	12.0%	12.0%
CAGR 2023-2028	10.3%	51.7%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



United States

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in United States will be \$1,257.27 million dollars in 2022 and the value added amount for the market will be \$1,795.85 million dollars. The cost of resales for this equipment is expected to reach \$102.79 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	1,257,266.82
Cost of resales (\$1,000)	102,787.20
Cost of purchased fuels consumed (\$1,000)	40,070.78
Cost of purchased electricity (\$1,000)	38,182.70
Cost of contract work (\$1,000)	17,276.26
Value of resales (\$1,000)	132,752.12
Value added (\$1,000)	1,795,845.45

Capital Expenses Estimates

The total capital expenses for this market in United States will be \$148.41 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$123.42 million dollars. The expenditures for buildings for this equipment expected to reach \$24.99 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	148,406.50
Capital expenditures for buildings and other structures (\$1,000)	24,986.03
Capital expenditures for machinery and equipment (\$1,000)	123,420.47
Capital expenditures for automobiles, trucks, etc. (\$1,000)	1,569.75
Capital expenditures for computers and peripheral equip. (\$1,000)	3,289.89
Capital expenditures for all other machinery and equip. (\$1,000)	118,560.82

*2021-2022 Forecasts

Source: Barnes Reports

Venezuela

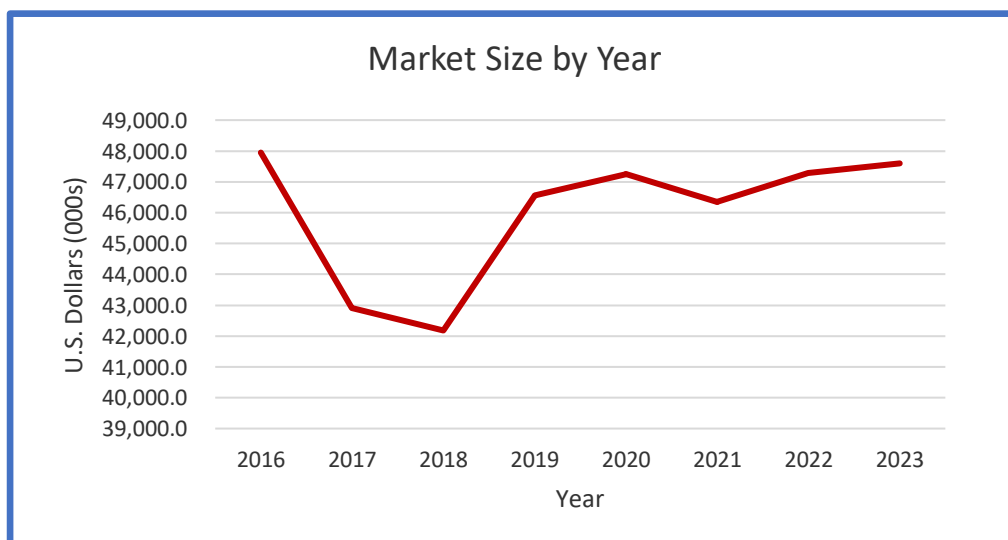
Equipment Type: Inkjet inks

The market for this equipment in Venezuela is estimated to be \$47.3 million dollars in 2022 and is expected to change by 0.7 percent from 2022 to 2023. The market will be 594.6 million Bolivars in 2022 and is forecast to change by 14 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Bolivars
2016	47,947.7	317,850.4
2017	42,910.2	316,984.0
2018	42,180.0	337,829.4
2019	46,568.4	404,385.6
2020	47,253.1	451,027.2
2021	46,345.9	521,452.5
2022	47,280.3	594,554.5
2023	47,602.5	669,440.4
2028	44,745.3	1,041,695.3
Y-to-Y Change	US Dollars	Bolivars
2016-2017	-10.5%	-0.3%
2017-2018	-1.7%	6.6%
2018-2019	10.4%	19.7%
2019-2020	1.5%	11.5%
2020-2021	-1.9%	15.6%
2021-2022	2.0%	14.0%
2022-2023	0.7%	12.6%
CAGR 2023-2028	-1.2%	55.6%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Venezuela

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Venezuela will be \$18.32 million dollars in 2022 and the value added amount for the market will be \$26.17 million dollars. The cost of resales for this equipment is expected to reach \$1.50 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	18,321.40
Cost of resales (\$1,000)	1,497.86
Cost of purchased fuels consumed (\$1,000)	583.93
Cost of purchased electricity (\$1,000)	556.41
Cost of contract work (\$1,000)	251.76
Value of resales (\$1,000)	1,934.52
Value added (\$1,000)	26,169.78

Capital Expenses Estimates

The total capital expenses for this market in Venezuela will be \$2.16 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$1.80 million dollars. The expenditures for buildings for this equipment expected to reach \$0.36 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	2,162.64
Capital expenditures for buildings and other structures (\$1,000)	364.11
Capital expenditures for machinery and equipment (\$1,000)	1,798.53
Capital expenditures for automobiles, trucks, etc. (\$1,000)	22.88
Capital expenditures for computers and peripheral equip. (\$1,000)	47.94
Capital expenditures for all other machinery and equip. (\$1,000)	1,727.72

*2021-2022 Forecasts

Source: Barnes Reports

Vietnam

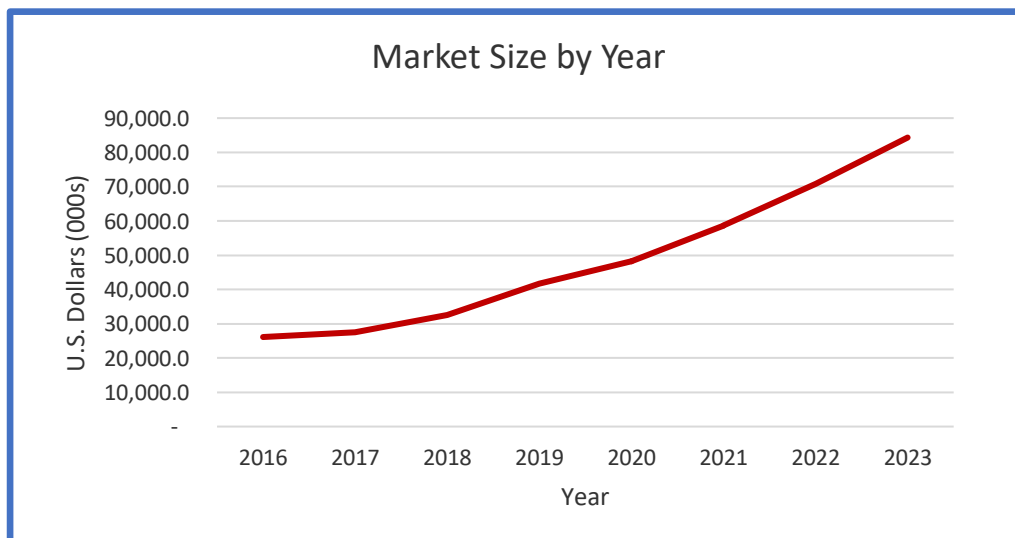
Equipment Type: Inkjet inks

The market for this equipment in Vietnam is estimated to be \$70.8 million dollars in 2022 and is expected to change by 19.2 percent from 2022 to 2023. The market will be 1648476.7 million Dongs in 2022 and is forecast to change by 21.5 percent from 2022 to 2023.

Market Sales (000s)		
Year	US Dollars	Dongs
2016	26,132.3	592,441,698.1
2017	27,562.2	616,568,637.0
2018	32,606.1	736,964,587.2
2019	41,705.4	961,319,478.2
2020	48,226.7	1,109,948,350.5
2021	58,615.0	1,357,169,823.0
2022	70,769.6	1,648,476,673.0
2023	84,326.8	1,976,114,619.8
2028	184,047.1	4,444,537,151.4
Y-to-Y Change	US Dollars	Dongs
2016-2017	5.5%	4.1%
2017-2018	18.3%	19.5%
2018-2019	27.9%	30.4%
2019-2020	15.6%	15.5%
2020-2021	21.5%	22.3%
2021-2022	20.7%	21.5%
2022-2023	19.2%	19.9%
CAGR 2023-2028	23.7%	124.9%

Source: Barnes Reports

*2021-2022 Forecasts; 2023-2028 Projections



Vietnam

Equipment Type: Inkjet inks

Costs and Value Added Estimates

The total cost of materials for this market in Vietnam will be \$27.42 million dollars in 2022 and the value added amount for the market will be \$39.17 million dollars. The cost of resales for this equipment is expected to reach \$2.24 million dollars in 2022.

2022 Costs and Value Added	US Dollars (000s)
Total cost of materials (\$1,000)	27,423.64
Cost of resales (\$1,000)	2,242.01
Cost of purchased fuels consumed (\$1,000)	874.03
Cost of purchased electricity (\$1,000)	832.85
Cost of contract work (\$1,000)	376.83
Value of resales (\$1,000)	2,895.60
Value added (\$1,000)	39,171.18

Capital Expenses Estimates

The total capital expenses for this market in Vietnam will be \$3.24 million dollars in 2022 and the expenditures for machinery and equipment for the market will be \$2.69 million dollars. The expenditures for buildings for this equipment expected to reach \$0.54 million dollars in 2022.

2022 Capital Expenses	US Dollars (000s)
Total capital expenditures (\$1,000)	3,237.06
Capital expenditures for buildings and other structures (\$1,000)	545.00
Capital expenditures for machinery and equipment (\$1,000)	2,692.06
Capital expenditures for automobiles, trucks, etc. (\$1,000)	34.24
Capital expenditures for computers and peripheral equip. (\$1,000)	71.76
Capital expenditures for all other machinery and equip. (\$1,000)	2,586.06

*2021-2022 Forecasts

Source: Barnes Reports

Appendix

Equipment Type: Inkjet inks

Number of Establishments

General Definition

An establishment is a single physical location at which business is conducted and/or services are provided. It is not necessarily identical with a company or enterprise, which may consist of one establishment or more. Economic census figures represent a summary of reports for individual establishments rather than companies. For cases where a census report was received, separate information was obtained for each location where business was conducted. When administrative records of other Federal agencies were used instead of a census report, no information was available on the number of locations operated. Each economic census establishment was tabulated according to the physical location at which the business was conducted.

When two activities or more were carried on at a single location under a single ownership, all activities generally were grouped together as a single establishment. The entire establishment was classified on the basis of its major activity and all data for it were included in that classification. However, when distinct and separate economic activities (for which different industry classification codes were appropriate) were conducted at a single location under a single ownership, separate establishment reports for each of the different activities were obtained in the census.

Sector-Specific Information

Construction sector. Establishments are defined as a relatively permanent office or other place of business where the usual business activities related to construction are conducted. Establishments do not represent each project or construction site. Includes all establishments that were in business at any time during the year. It covers all full-year and part-year operations. Construction establishments which were inactive or idle for the entire year were not included. Establishments are based on a survey which included all large employers and a sample of the smaller ones.

Information; Professional, Scientific, and Technical Services; Administrative and Support and Waste Management and Remediation Services; Educational Services; Health Care and Social Assistance; Arts, Entertainment, and Recreation; and Other Services (Except Public Administration) sectors. An establishment is included in the census if it is an employer, the establishment has \$1,000 in payroll, and was in operation at any time during 1997. Leased service departments (separately owned businesses operated as departments or concessions of other service establishments or of retail businesses, such as a separately owned shoeshine parlor in a barber shop, or a beauty shop in a department store) are treated as separate service establishments for census purposes. Leased retail departments located in service establishments (e.g., a gift shop located in a hotel) are considered separate retail establishments.

Manufacturing sector. Includes all manufacturing establishments (plants) with one employee or more and establishments in operation at any time during the year.

Mining sector. Includes all mineral establishments with one employee or more and establishments in operation at any time during the year. Establishments in the crude petroleum and natural gas and support activities for mining represent statewide operations rather than those at a single physical location.

Real Estate and Rental and Leasing sector. Data for individual properties leased or managed by property lessors or property managers are not normally considered separate establishments, but rather the permanent offices from which the properties are leased or managed are considered establishments. Data for separate automotive rental offices or concessions (e.g., airport locations) in the same metropolitan area for which a common fleet of cars is maintained are merged together and not considered as separate establishments.

Retail Trade sector. Leased departments are treated as separate establishments and are classified according to the kind of business they conduct. For example, a leased department selling shoes within a department store would be considered a separate retail establishment under the "shoe stores" classification.

Accommodation and Foodservices sector. Leased departments are treated as separate establishments and are classified according to the kind of business they conduct. For example, a leased department selling gifts/souvenirs within a hotel would be considered a separate retail establishment under the "gift, novelty, and souvenir stores" classification.

Auxiliaries sector. In the Standard Industrial Classification (SIC) system, auxiliary establishments (i.e., those establishments primarily serving other establishments of the same enterprise) were classified in

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industry of the establishments served. In the North American Industry Classification System (NAICS), auxiliary establishments are classified according to the services performed rather than the industry served.

Sales, Shipments, Receipts, Revenue, or Business Done

General Definition

Includes the total sales, shipments, receipts, revenue, or business done by establishments within the scope of the economic census. The definition of each of these items is included in the information provided below.

Sector-Specific Information

Construction sector - Includes the value of construction work and other business receipts for work done by establishments during the year. Included is new construction, additions and alterations or reconstruction, and maintenance and repair construction work. Also included is the value of any construction work done by the reporting establishments for themselves.

Speculative builders were instructed to include the value of buildings and other structures built or being built for sale in the current year but not sold. They were to include the costs of such construction plus normal profit. Also included is the cost of construction work done on buildings for rent or lease.

Establishments engaged in the sale and installation of such construction components as plumbing, heating, and central air-conditioning supplies and equipment; lumber and building materials; paint, glass, and wallpaper; electrical and wiring supplies; and elevators or escalators were instructed to include both the value for the installation and the receipts covering the price of the items installed.

Excluded was the cost of industrial and other specialized machinery and equipment, which are not an integral part of a structure.

Finance and Insurance sector - Includes revenue from all business activities whether or not payment was received in the census year, including commissions and fees from all sources, rents, net investment income, interest, dividends, royalties, and net insurance premiums earned. Revenue from leasing property marketed under operating leases is included, as well as interest earned from property marketed in the census year under capital, finance, or full payout leases. Revenue also includes the total value of service contracts and amounts received for work subcontracted to others.

Revenue does not include sales and other taxes collected from customers and remitted directly by the firm to a local, state, or Federal tax agency.

Information sector - Includes receipts from customers or clients for services rendered, from the use of facilities, and from merchandise sold, whether or not payment was received. Receipts include royalties, license fees, and other payments from the marketing of intangible products (e.g., licensing the use of or granting reproduction rights for software, musical compositions, and other intellectual property). Receipts also include the rental and leasing of vehicles, equipment, instruments, tools, etc.; total value of service contracts; market value of compensation received in lieu of cash; amounts received for work subcontracted to others; dues and assessments for members and affiliates; this establishment's share of receipts from departments, concessions, and vending and amusement machines operated by others. Receipts from services provided to foreign customers from U.S. locations, including services performed for foreign parent firms, subsidiaries, and branches are included. For public broadcast stations and libraries, include receipts from contributions, gifts, grants, and income from interest, rental of real estate, and dividends.

Receipts DO NOT include sales and other taxes collected directly from customers or clients and paid directly to a local, state, or Federal tax agency. Also excluded are gross receipts collected on behalf of others; gross receipts or departments or concessions operated by others; sales of used equipment previously rented or leased to customers; proceeds from the sale of real estate (land and buildings), investments, or other assets (except inventory held for resale); contributions, gifts, grants, and income from interest, rental of real estate, and dividends EXCEPT for public broadcast stations and libraries; domestic intracompany transfers; receipts of foreign subsidiaries; and other nonoperating income.

Management of Companies and Enterprises sector- For holding companies, revenue includes revenue of only the holding company establishment, including net investment income, interest, and dividends.

Manufacturing sector - Covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products

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transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

Mining sector - Includes the net selling values, f.o.b. mine or plant after discounts and allowances, excluding freight charges and excise taxes. Shipments includes all products physically shipped from the establishment during the year, including material withdrawn from stockpiles and products shipped on consignment, whether or not sold in the current year. Prepared material or concentrates includes preparation from ores mined at the same establishment, purchased, received from other operations of the same company, or received for milling on a custom or toll basis. For products transferred to other establishments of the same company or prepared on a custom basis, companies were requested to report the estimated value, not merely the cost of producing the items. Multiestablishment companies were asked to report value information for each establishment as if it were a separate economic unit. They were instructed to report the value of all products transferred to other plants of the company at their full economic value; to include, in addition to direct cost of production, a reasonable proportion of company overhead and profits. For all establishments classified in an industry, value of shipments and receipts includes (1) the value of all primary products of the industry; (2) the value of secondary products which are primary to other industries; (3) the receipts for contract work done for others, except custom milling; and (4) the value of products purchased and resold without further processing. Receipts for custom milling are not included to avoid duplication with the value of custom milled ores included in an industry's primary and secondary products. Some duplication exists in industry and industry group totals because of the inclusion of materials transferred from one establishment to another for mineral preparation or resale.

Professional, Scientific, and Technical Services; Administrative and Support and Waste Management and Remediation Services; Educational Services; Health Care and Social Assistance; Arts, Entertainment, and Recreation; and Other Services (Except Public Administration) sectors - TAXABLE ESTABLISHMENTS: Includes receipts from customers or clients for services rendered, from the use of facilities, and from merchandise sold whether or not payment was received. For advertising agencies, travel industries, and other service establishments operating on a commission basis, receipts include commissions, fees, and other operating income, NOT gross billings and sales. Excise taxes on gasoline, liquor, tobacco, etc., which are paid by the manufacturer or wholesaler and passed on in the cost of goods purchased by the service establishment are also included. The establishments share of receipts from departments, concessions, and vending and amusement machines operated by others are included as part of receipts. Receipts also include the total value of service contracts, market value of compensation received in lieu of cash, amounts received for work subcontracted to others, and dues and assessments from members and affiliates. Receipts from services provided to foreign customers from U.S. locations, including services preformed for foreign parent firms, subsidiaries, and branches are included.

Receipts are net after deductions for refunds and allowances for merchandise returned by customers. Receipts DO NOT include sales, occupancy, admissions, or other taxes collected from customers and remitted directly by the firm to a local, state, or Federal tax agency, nor do they include income from such sources as contributions, gifts, and grants; dividends, interest, and investments; or sale or rental of real estate. Also excluded are receipts (gross) of departments and concessions which are operated by others; sales of used equipment rented or leased to customers; domestic intracompany transfers; receipts of foreign subsidiaries; and other nonoperating income, such as royalties, franchise fees, etc. Receipts DO NOT include service receipts of manufacturers, wholesalers, retail establishments, or other businesses whose primary activity is other than service. They do, however, include receipts other than from services rendered (e.g., sale of merchandise to individuals or other businesses) by establishments primarily engaged in performing services and classified in the service industries.

TAX EXEMPT ESTABLISHMENTS: Includes revenue from customers or clients for services rendered and merchandise, whether or not payment was received, and gross sales of merchandise, minus returns and allowances. Also included are income from interest, dividends, gross rents (including display space rentals and share of receipts from departments operated by other companies), gross contributions, gifts, grants (whether or not restricted for use in operations), royalties, dues and assessments from members and affiliates, commissions earned from the sale of merchandise owned by others (including commissions from vending machine operators), and gross receipts from fundraising activities. Receipts from taxable business activities of firms exempt from Federal income tax (unrelated business income) are also included in revenue. Revenue DOES NOT include sales, admissions, or other taxes collected by the organization from customers or clients and paid directly to a local, state, or Federal tax agency; income from the sale of real estate, investments, or other assets (except inventory held for resale); gross receipts of departments, concessions, etc., that are operated by others; and amounts transferred to operating funds from capital or reserve funds.

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Real Estate and Rental and Leasing sector - Includes revenue from all business activities whether or not payment was received in the census year, including commissions and fees from all sources, rents, net investment income, interest, dividends, and royalties. Revenue from leasing property marketed under operating leases is included. Revenue also includes the total value of service contracts, amounts received for work subcontracted to others, and rents from real property sublet to others.

Revenue does not include sales and other taxes collected from customers and remitted directly by the firm to a local, state, or Federal tax agency.

Retail Trade sector - Includes merchandise sold for cash or credit at retail and wholesale by establishments primarily engaged in retail trade; amounts received from customers for layaway purchases; receipts from rental of vehicles, equipment, instruments, tools, etc.; receipts for delivery, installation, maintenance, repair, alteration, storage, and other services; the total value of service contracts; and gasoline, liquor, tobacco, and other excise taxes which are paid by the manufacturer or wholesaler and passed on to the retailer.

Sales are net after deductions for refunds and allowances for merchandise returned by customers. Trade-in allowances are not deducted from sales. Sales do not include carrying or other credit charges; sales (or other) taxes collected from customers and forwarded to taxing authorities; gross sales and receipts of departments or concessions operated by other companies; and commissions or receipts from the sale of government lottery tickets.

Sales do not include retail sales made by manufacturers, wholesalers, service establishments, or other businesses whose primary activity is other than retail trade. They do include receipts other than from the sale of merchandise at retail, e.g., service receipts, sales to industrial users, and sales to other retailers, by establishments primarily engaged in retail trade.

Transportation and Warehousing sector - Includes revenue from all business activities whether or not payment was received in the census year, including commissions and fees for arranging the transportation of freight.

Revenue does not include sales and other taxes collected from customers and remitted directly by the firm to a local, state, or Federal tax agency.

Utilities sector - Includes revenue from all business activities whether or not payment was received in the census year.

Revenue does not include sales and other taxes collected from customers and remitted directly by the firm to a local, state, or Federal tax agency.

Accommodation and Foodservices sector - Includes sales from customers for services rendered, from the use of facilities, and from merchandise sold. Also includes dues and assessments from members and affiliates.

Sales do not include carrying or other credit charges; sales (or other) taxes collected from customers and forwarded to taxing authorities; gross sales and receipts of departments or concessions operated by other companies; and commissions or receipts from the sale of government lottery tickets.

Excludes sales from civic and social organizations, amusement and recreation parks, theaters, and other recreation or entertainment facilities providing food and beverage services.

Number of Employees

General Definition

Paid employees consists of full-time and part-time employees, including salaried officers and executives of corporations. Included are employees on paid sick leave, paid holidays, and paid vacations; not included are proprietors and partners of unincorporated businesses. The definition of paid employees is the same as that used on IRS Form 941.

Sector-Specific Information

Construction and Manufacturing sectors. Comprises all full-time and part-time employees on the payrolls of establishments who worked or received pay for any part of the pay period including the 12th of March, May, August, and November, divided by 4.

Finance and Insurance sector. Includes all employees who were on the payroll during the pay period including March 12. Excludes independent (nonemployee) agents.

Information; Professional, Scientific, and Technical Services; Administrative and Support and Waste Management and Remediation Services; Educational Services; Health Care and Social Assistance; Arts, Entertainment, and Recreation; and Other Services (Except Public Administration) sectors - Includes all employees who were on the payroll during the pay period including March 12. Includes members of a professional service organization or association which operates under state professional corporation statutes and files a corporate Federal income tax return. Excludes employees of departments or concessions operated by other companies at the establishment.

Management of Companies and Enterprises sector. Includes all employees who were on the payroll during the pay period including March 12.

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Mining sector. Also included are employees working for miners paid on a per ton, car, or yard basis. Excluded are employees at the mine but on the payroll of another employer (such as employees of contractors) and employees at company stores, boardinghouses, bunkhouses, and recreational centers. Also excluded are members of the Armed Forces and pensioners carried on the active rolls but not working during the period. Includes all employees who were on the payroll during the pay period including March 12.

Real Estate and Rental and Leasing sector. Includes all employees who were on the payroll during the pay period including March 12. Excludes independent (nonemployee) agents.

Retail Trade and Accommodation and Foodservices sectors. Includes all employees on the payroll during the pay period including March 12. Excludes employees of departments or concessions operated by other companies at the establishment.

Transportation and Warehousing sector. Includes all employees who were on the payroll during the pay period including March 12.

Utilities sector. Includes all employees who were on the payroll during the pay period including March 12.