

2022 Global Manufacturing Forecast

Construction Sands Such As Clayey
Sands; Kaolinic Sands; Feldspathic
Sands

Industry - Metals & Mining



Product Code - 08121190

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Country Markets

(Historical Data Trends and Geographic Data)

Global Markets

(Historical Data Trends)

Regional Markets

(Historical Data Trends)

Country Name	Code	Country Name	Code
Argentina	ARG	Nigeria	NGA
Australia	AUS	Norway	NOR
Austria	AUT	Pakistan	PAK
Bangladesh	BGD	Philippines	PHL
Belgium	BEL	Poland	POL
Brazil	BRA	Puerto Rico	PRI
Canada	CAN	Romania	ROU
Chile	CHL	Russian Federation	RUS
China	CHN	Saudi Arabia	SAU
Czech Republic	CZE	Singapore	SGP
Denmark	DNK	South Africa	ZAF
Egypt, Arab Rep.	EGY	Spain	ESP
Finland	FIN	Sweden	SWE
France	FRA	Switzerland	CHE
Germany	DEU	Thailand	THA
Hungary	HUN	Turkey	TUR
India	IND	United Arab Emirates	ARE
Indonesia	IDN	United Kingdom	GBR
Ireland	IRL	United States	USA
Israel	ISR	Venezuela, RB	VEN
Italy	ITA	Vietnam	VNM
Japan	JPN		
Korea, Rep.	KOR		
Malaysia	MYS		
Mexico	MEX		
Netherlands	NLD		

Users' Guide

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Industry - Metals & Mining

Scope of the Report

Growing interest in construction sands such as clayey sands; kaolinic sands; feldspathic sands produced in the metals & mining industry are expected to drive the market.

The market study aims at estimating the market size and the growth potential of this market. Topics analyzed within the report include a detailed breakdown of the global markets for construction sands such as clayey sands; kaolinic sands; feldspathic sands by geography and historical trend. The scope of the report extends to sizing of the construction sands such as clayey sands; kaolinic sands; feldspathic sands market and global market trends with market data for 2020 as the base year, 2021 and 2021 as the estimate years and forecast for 2023 with projection of CAGR from 2023 to 2028.

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. Market data is provided in U.S. dollar value at global and regional levels, as well as local currencies for all countries.

Report Coverage

The report focuses a detailed calculation of original equipment manufacturers and the related system providers. The study forecasts the market value of the construction sands such as clayey sands; kaolinic sands; feldspathic sands market.

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).

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 geographic areas in the countries in the report for regions, districts, provinces, states and cities.

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

Benefits of the Report

This report is primarily aimed at business professionals in fields related to the market. These may include manufacturers and their suppliers, financiers and investors, researchers with backgrounds in the market, marketing and sales professionals, and others.

This report may also prove valuable to professional analysts, investors, public policy advisors and others who are seeking a better understanding and definition of how construction sands such as clayey sands; kaolinic sands; feldspathic sands fit into the broader global market.

The report will help the market leaders and new entrants in this market with information on the closest approximations of the revenue numbers for the overall market. This report will help stakeholders understand the competitive landscape and gain more insights to better position their businesses and to plan market strategies. The report also helps stakeholders understand the opportunities of the market.

Methodology

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Industry: Metals & Mining

Methodology

The Global Manufacturing Forecast report series by Perry/Hope Partners features market sales of thousands of manufactured products in various industries such as transportation, hardware, electronics, electrical products, printing services and food products. The reports are published annually based on a unique methodology that uses robust data sources and detailed logarithms to estimate global markets for manufactured products. The main steps in the methodology are:

- Manufactured products definitions and historical data are primarily based on EuroStat's Prodcom database which is updated annually.
- Market sales for the European countries are used as a ratio to all other countries in the report by GDP and the percent of the total manufacturing sector as percent of the countries total GDP.
- Adjustments to estimates are both vertical (industry) analysis and horizontal (trend) analysis.
- Demographic breakdowns of regions, cities, states, districts and provinces are based on historical population and regional GDP data projected forward.

Executive Summary

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Industry: Metals & Mining

Global Manufacturing Industries

The global manufacturing sector has dozens of manufacturing industries, all of which grow or contract at different rates based on consumer and industrial demand.

One database, Prodcod, categorizes the manufacturing industries into these divisions:

- Section C - Manufacture

Division 10 - Manufacture of food products

Division 11 - Manufacture of beverages

Division 12 - Manufacture of tobacco products

Division 13 - Manufacture of textiles

Division 14 - Manufacture of wearing apparel

Division 15 - Manufacture of leather and related products

Division 16 - Manufacture of wood and of products of wood and cork, except furniture

Division 17 - Manufacture of paper and paper products

Division 18 - Printing and reproduction of recorded media

Division 19 - Manufacture of coke and refined petroleum products

Division 20 - Manufacture of chemicals and chemical products

Division 21 - Manufacture of basic pharmaceutical products and preparations

Division 22 - Manufacture of rubber and plastic products

Division 23 - Manufacture of other non-metallic mineral products

Division 24 - Manufacture of basic metals

Division 25 - Manufacture of fabricated metal products, except machinery and equip.

Division 26 - Manufacture of computer, electronic and optical products

Division 27 - Manufacture of electrical equipment

Division 28 - Manufacture of machinery and equipment n.e.c.

Division 29 - Manufacture of motor vehicles, trailers and semi-trailers

Division 30 - Manufacture of other transport equipment

Division 31 - Manufacture of furniture

Division 32 - Other manufacturing

Division 33 - Repair and installation of machinery and equipment

Executive Summary

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Global Manufacturing Outlook (2022)

Perry/Hope Partners is forecasting 4.0 percent global GDP growth from 2021 to 2022, recovering from the global COVID-19 economic downturn. China's GDP forecast for 2021 to 2022 is 7.0 percent with India following closely behind at 6.0 percent. The United States will have one of the strongest economies of the mature, developed countries (4.5 percent). Germany, another mature, developed country is far behind the USA (2.0 percent) and Japan continues to struggle due to its government's debt and disappointing economic policies (1.5 percent).

Perry/Hope Partners is also forecasting 5.0 percent global manufacturing sector growth from 2022 to 2023. The oil and gas manufacturing subsector will experience the highest growth of 9.5 percent.

GLOBAL MANUFACTURING INDUSTRY (USD Billion)	2022	2023	2028
MINING MATERIALS	161.1	174.9	261.0
FOOD MFG	6,976.5	7,380.4	8,798.4
TEXTILE MFG	378.2	397.3	519.6
APPAREL MFG	415.2	443.5	726.5
LUMBER MFG	635.0	666.3	763.3
PULP AND PAPER MFG	1,326.7	1,374.6	1,538.5
OIL AND GAS	3,961.7	4,338.6	8,198.7
CHEMICALS	1,951.3	2,136.9	4,038.1
PLASTIC MFG	1,143.7	1,210.1	1,447.9
METAL MFG	4,221.6	4,347.5	4,997.6
ELECTRONICS MFG	1,386.7	1,448.2	1,648.3
ELECTRICAL EQUIPMENT MFG	3,318.7	3,483.8	4,330.4
AGRICULTURAL MACHINERY MFG	3,589.0	3,608.4	3,538.0
METAL-WORKING MACHINERY MFG	1,274.5	1,299.4	1,414.7
INDUSTRIAL MACHINERY MFG	1,630.6	1,711.6	1,983.4
VEHICLE MFG	1,177.5	1,205.6	1,174.4
TOTAL	33,547.9	35,227.2	45,378.9

The largest industry, food manufacturing, will be \$6.9 trillion globally in 2022. The second largest industry, metal manufacturing will be \$4.2 trillion in 2022.

Executive Summary

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Chemical manufacturing is forecast to be \$1.2 trillion in sales for the world's countries. The vehicle manufacturing sector will be \$1.9 trillion globally in 2022 followed by agricultural machinery manufacturing (\$3.5 trillion).

GLOBAL MANUFACTURING INDUSTRY (Year to Year Change Rate)	CAGR	
	2022-2023	2023-2028
MINING MATERIALS	8.6%	9.8%
FOOD MFG	5.8%	3.8%
TEXTILE MFG	5.0%	6.2%
APPAREL MFG	6.8%	12.8%
LUMBER MFG	4.9%	2.9%
PULP AND PAPER MFG	3.6%	2.4%
OIL AND GAS	9.5%	17.8%
CHEMICALS	9.5%	17.8%
PLASTIC MFG	5.8%	3.9%
METAL MFG	3.0%	3.0%
ELECTRONICS MFG	4.4%	2.8%
ELECTRICAL EQUIPMENT MFG	5.0%	4.9%
AGRICULTURAL MACHINERY MFG	0.5%	-0.4%
METAL-WORKING MACHINERY MFG	2.0%	1.8%
INDUSTRIAL MACHINERY MFG	5.0%	3.2%
VEHICLE MFG	2.4%	-0.5%
TOTAL	5.0%	5.8%

The global oil and gas manufacturing industry is highest growth industry with 9.5 percent from 2022 to 2023. The second highest growing industry is the global chemicals manufacturing industry (9.5 percent from 2022 to 2023).

The global mining materials manufacturing industry is another high growth industry with 8.6 percent from 2022 to 2023 followed by the global apparel manufacturing industry (6.8 percent from 2022 to 2023).

Executive Summary

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Political Factors Impacting Global Economics

The two largest countries in the world, the United States and China, continue to battle over many issues that impact trade between the two countries. These include 1) China's pirating of U.S. media and technology products, 2) American boycotts over the Uyghur population genocide and imprisonment, 3) anti-democracy crackdowns in Hong Kong, and 4) anti-free speech policies of the Chinese communist government.

The European market is also being disrupted by energy dependence on Russia gas and oil while Russia continues aggression toward Ukraine. This dependence may change if Russia pushes its staged armies and missiles into Ukraine as it did with the Crimean region years ago.

Employment Factors Impacting Global Economics

Labor force levels in most developed countries have not fully recovered from the 2020 COVID-19 pandemic. Many working-age citizens that found shelter on unemployment benefits and welfare programs have left the labor force completely. This "Great Resignation" has created many transportation, manufacturing and service problems in nearly every global industry. These workers have decided that they will not work for a few reasons: 1) fear of being exposed to the COVID virus, 2) homeschooling children, and 3) preferring to work remotely which their employer does not offer.

Some sectors such as restaurants, hotels, entertainments, and personal services will lag in unemployment as many citizens will still be unwilling to consume these services after the year-long battle with the pandemic.

Executive Summary

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Monetary Factors Impacting Global Economics

Interest rates are at rock bottom in most of the largest countries in reaction to the pandemic. Global stock markets are becoming inflated with government "printing" money for economic stimulus.

Access to credit by both consumers and businesses has been as widely open as it was before the recent recession. Homebuying has been growing at a steady rate as well as capital expenditures on new equipment, buildings and inventories.

Inflation is at its highest levels in forty years. High inflation is due to 1) fewer workers in the labor force, 2) shipping problems, and 3) manufacturing slow downs.

Technology Factors Impacting Global Economics

Technology advancements continue to quickly change every industry and how they produced their products, interact with their customers and deliver their services.

The integration of the internet into every facet of a business' functions continues at a steady pace. Online shopping is displacing "brick and mortar" shopping in retail and providing services through online interactions is quickly replacing face-to-face interaction as many younger consumers prefer website or email communication.

Advertising and consumer communication through social media is rivaling broadcast and print media as the preferred way to reach and interact with customers.

Global Sales

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Countries (USD Millions)

Country Name	2017	2018	2019	2020	2021	2022	2023	2028
Argentina	11.3	9.0	7.5	5.8	5.4	4.8	4.3	1.8
Australia	10.6	11.4	10.2	8.7	9.5	9.6	9.7	8.8
Austria	9.7	10.6	9.6	8.5	9.5	10.0	10.4	11.7
Bangladesh	5.9	6.7	7.4	7.4	9.4	11.2	13.4	28.9
Belgium	8.6	9.1	8.4	7.3	7.9	8.2	8.4	8.6
Brazil	29.8	25.3	24.7	20.6	22.0	22.1	22.0	18.5
Canada	27.8	28.9	27.8	25.9	30.0	32.6	35.3	44.7
Chile	4.0	4.3	3.7	3.4	3.7	3.9	4.0	4.1
China	494.2	530.3	495.8	467.3	540.9	591.1	643.0	881.9
Czech Republic	7.1	7.8	7.4	6.8	7.7	8.3	9.0	11.6
Denmark	5.8	6.3	6.2	5.3	5.9	6.2	6.5	7.4
Egypt, Arab Rep.	5.3	5.6	6.3	5.1	5.6	5.8	6.0	5.4
Finland	5.3	5.6	5.0	4.3	4.7	4.9	5.0	5.0
France	35.5	37.8	35.4	31.2	34.9	36.5	38.0	39.9
Germany	103.3	110.5	97.8	89.5	100.4	105.5	110.4	118.4
Hungary	3.8	4.0	3.7	3.4	3.8	4.0	4.2	4.6
India	54.0	54.2	49.6	46.0	52.0	55.5	59.0	72.1
Indonesia	28.1	28.4	28.6	26.9	31.8	35.2	38.8	53.9
Ireland	14.6	17.0	16.6	15.2	17.7	19.5	21.4	30.5
Israel	5.8	6.1	5.6	5.1	5.8	6.2	6.6	8.0
Italy	40.2	42.9	38.7	35.5	40.0	42.3	44.6	49.3
Japan	138.2	140.9	135.6	127.8	138.0	147.3	156.5	191.0
Korea, Rep.	61.3	62.9	54.1	51.7	58.7	62.5	66.2	75.6
Malaysia	9.5	10.6	10.1	9.7	11.5	12.8	14.1	20.0
Mexico	27.4	29.0	28.5	25.0	28.1	29.7	31.2	34.1
Netherlands	12.6	13.9	12.7	11.5	12.9	13.7	14.5	17.2
Nigeria	4.5	5.3	6.7	5.5	6.5	7.2	7.9	9.9
Norway	3.5	3.5	3.3	2.9	3.2	3.4	3.5	3.1
Pakistan	5.0	5.3	4.5	4.1	4.5	4.7	4.9	4.9
Philippines	8.8	9.1	9.0	8.6	10.3	11.5	12.7	18.3
Poland	12.7	13.5	12.9	11.2	12.4	13.0	13.6	15.1
Puerto Rico	6.9	6.6	6.4	5.7	6.4	6.7	7.0	7.5
Romania	5.8	6.2	5.5	5.4	6.4	7.0	7.7	10.3
Russian Federation	26.3	29.8	28.4	25.6	29.3	31.6	34.0	43.9
Saudi Arabia	12.2	13.8	12.9	12.8	15.4	17.4	19.5	29.7
Singapore	8.8	10.6	9.4	9.6	11.7	13.3	15.1	24.2

Global Sales

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Countries (USD Millions)

Country Name	2017	2018	2019	2020	2021	2022	2023	2028
South Africa	5.8	5.9	5.4	4.8	5.4	5.6	5.9	6.1
Spain	20.5	21.9	19.8	17.2	19.1	20.0	20.8	19.2
Sweden	9.7	9.9	8.9	7.7	8.3	8.5	8.6	7.8
Switzerland	17.0	17.6	17.3	15.5	17.8	19.0	20.3	23.8
Thailand	17.1	18.6	18.1	17.2	20.4	22.7	25.3	38.5
Turkey	20.5	20.1	18.0	16.1	17.4	17.6	17.9	14.6
United Arab Emirates	4.8	5.1	4.8	4.5	5.3	5.8	6.3	8.3
United Kingdom	32.8	34.7	31.9	28.4	30.9	31.8	32.5	28.1
United States	297.7	313.9	303.7	277.6	320.5	346.8	373.8	463.1
Venezuela, RB	7.3	7.0	6.3	5.3	5.2	5.1	4.9	3.8
Vietnam	4.7	5.4	5.6	5.4	6.6	7.6	8.7	15.5
GLOBAL	1,692.1	1,782.8	1,675.6	1,546.3	1,760.9	1,895.9	2,033.4	2,548.8

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Regional Sales

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

The market for this equipment in North America is estimated to be \$0.4 billion dollars in 2022 and is expected to change by 8.1 percent from 2021 to 2022. The market in the Asia-Pacific region for this equipment is estimated to be \$1.0 billion in 2022 and is forecast to change by 8.6 percent from 2022 to 2023. The European market is \$0.3 billion in 2022.

Market Size by Year (US\$ Millions)

	2017	2018	2019	2020	2021	2022	2023	2028
North America	352.9	371.8	359.9	328.5	378.6	409.1	440.3	542.0
Latin America	41.1	34.3	32.2	26.4	27.5	26.9	26.3	20.4
Europe	301.4	322.9	295.7	266.8	299.2	315.2	330.8	362.0
Asia-Pacific	861.9	912.0	853.5	803.4	918.6	998.0	1,079.4	1,433.0
Middle East	20.5	20.1	18.0	16.1	17.4	17.6	17.9	14.6
Africa	10.3	11.2	12.1	10.4	11.9	12.8	13.8	16.0
GLOBAL	1,577.8	1,661.3	1,559.3	1,441.2	1,641.2	1,766.9	1,894.7	2,372.0

Regional Distribution

	2017	2018	2019	2020	2021	2022	2023	2028
North America	22.4%	22.4%	23.1%	22.8%	23.1%	23.2%	23.2%	22.8%
Latin America	2.6%	2.1%	2.1%	1.8%	1.7%	1.5%	1.4%	0.9%
Europe	19.1%	19.4%	19.0%	18.5%	18.2%	17.8%	17.5%	15.3%
Asia-Pacific	54.6%	54.9%	54.7%	55.7%	56.0%	56.5%	57.0%	60.4%
Middle East	1.3%	1.2%	1.2%	1.1%	1.1%	1.0%	0.9%	0.6%
Africa	0.7%	0.7%	0.8%	0.7%	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	2023-2028
North America		5.4%	-3.2%	-8.7%	15.3%	8.1%	7.6%	23.1%
Latin America		-16.5%	-6.2%	-18.0%	4.1%	-2.0%	-2.3%	-22.6%
Europe		7.1%	-8.4%	-9.8%	12.1%	5.4%	4.9%	9.4%
Asia-Pacific		5.8%	-6.4%	-5.9%	14.3%	8.6%	8.2%	32.8%
Middle East		-2.0%	-10.4%	-10.6%	7.6%	1.6%	1.2%	-18.1%
Africa		9.3%	7.7%	-14.0%	14.5%	7.8%	7.4%	16.0%
GLOBAL		5.3%	-6.1%	-7.6%	13.9%	7.7%	7.2%	25.2%

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Argentina

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	11,315.8	0.67%		
2018	9,045.0	0.51%	2017-2018	-20.1%
2019	7,510.3	0.45%	2018-2019	-17.0%
2020	5,775.4	0.37%	2019-2020	-23.1%
2021	5,444.1	0.31%	2020-2021	-5.7%
2022	4,846.3	0.26%	2021-2022	-11.0%
2023	4,294.6	0.21%	2022-2023	-11.4%
2028	1,813.5	0.07%	CAGR 2023-2028	-11.6%

<u>Pesos</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Pesos 000s)</u>	<u>Year-to-Year Change</u>	
2017	121,762.3		
2018	171,700.2	2017-2018	41.0%
2019	232,772.0	2018-2019	35.6%
2020	210,748.9	2019-2020	-9.5%
2021	244,802.3	2020-2021	16.2%
2022	284,199.7	2021-2022	16.1%
2023	326,232.0	2022-2023	14.8%
2028	534,036.6	CAGR 2023-2028	63.7%

In 2022, sales for this product in Argentina is forecast to be \$4.8 million dollars.

Sales are forecast to change by -11.4 percent in the next year (2022 to 2023). In 2022, sales will be 284.2 million Pesos and will change by 16.1 percent in the next year (2022 to 2023).

In 2028, sales for this product in Argentina is forecast to be \$1.8 million dollars.

The compound annual growth rate is projected to change by -11.6 percent from 2023 to 2028. In 2028, sales will be 284.2 million Pesos and will change by 16.1 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Argentina

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regional Provinces (USD 000s)

	2021	2022	2023	2028
Buenos Aires	2,102.7	1,871.5	1,658.2	699.4
Catamarca	53.5	47.9	42.7	18.5
Chaco	145.6	129.7	115.0	48.7
Chubut	73.8	66.1	59.1	25.9
Ciudad Autónoma de Buenos Aires (352.6	310.3	271.9	108.5
Córdoba	442.9	393.5	348.1	145.5
Corrientes	136.5	121.6	107.7	45.5
Entre Ríos	166.2	147.7	130.7	54.8
Formosa	76.1	68.0	60.5	26.0
Jujuy	94.4	84.3	74.9	32.0
La Pampa	43.5	38.7	34.2	14.4
La Rioja	50.7	45.6	40.8	18.1
Mendoza	236.3	210.3	186.3	78.5
Misiones	158.6	141.9	126.5	54.9
Neuquén	81.6	73.2	65.3	28.6
Río Negro	87.3	77.8	69.0	29.3
Salta	176.9	158.4	141.2	61.5
San Juan	94.9	84.7	75.2	32.0
San Luis	65.5	58.9	52.7	23.4
Santa Cruz	43.5	39.4	35.6	16.4
Santa Fe	416.8	369.5	326.0	134.7
Santiago del Estero	121.0	107.9	95.8	40.8
Tierra del Fuego	21.6	19.6	17.8	8.3
Tucumán	201.6	179.7	159.4	67.7

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Australia

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	10,558.1	0.62%		
2018	11,354.3	0.64%	2017-2018	7.5%
2019	10,221.1	0.61%	2018-2019	-10.0%
2020	8,728.8	0.56%	2019-2020	-14.6%
2021	9,457.7	0.54%	2020-2021	8.3%
2022	9,605.6	0.51%	2021-2022	1.6%
2023	9,715.6	0.48%	2022-2023	1.1%
2028	8,768.4	0.34%	CAGR 2023-2028	-1.9%

<u>Dollars</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Dollars 000s)</u>	<u>Year-to-Year Change</u>	
2017	9,094.9		
2018	9,897.3	2017-2018	8.8%
2019	9,199.5	2018-2019	-7.1%
2020	7,590.2	2019-2020	-17.5%
2021	7,531.1	2020-2021	-0.8%
2022	7,455.3	2021-2022	-1.0%
2023	7,349.8	2022-2023	-1.4%
2028	5,835.1	CAGR 2023-2028	-20.6%

In 2022, sales for this product in Australia is forecast to be \$9.6 million dollars.

Sales are forecast to change by 1.1 percent in the next year (2022 to 2023). In 2022, sales will be 7.5 million Dollars and will change by -1 percent in the next year (2022 to 2023).

In 2028, sales for this product in Australia is forecast to be \$8.8 million dollars.

The compound annual growth rate is projected to change by -1.9 percent from 2023 to 2028. In 2028, sales will be 7.5 million Dollars and will change by -1 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Australia

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Adelaide	560.5	565.4	568.1	495.2
Brisbane	1,071.3	1,094.6	1,113.8	1,034.9
Cairns (Northern Beaches)	74.5	76.0	77.2	71.1
Canberra (NSW)	206.8	209.6	211.6	189.1
Central Coast (Gosford)	160.1	162.4	164.0	146.7
Darwin	53.4	54.1	54.6	48.6
Geelong	73.5	74.2	74.5	65.1
Gold Coast (NSW)	315.9	324.3	331.5	315.3
Hobart	87.0	87.8	88.2	76.9
Melbourne	2,018.1	2,049.9	2,073.6	1,870.5
Newcastle	152.6	153.5	153.7	132.0
Perth	957.3	979.7	998.4	934.9
Sunshine Coast (Caloundra)	123.9	126.9	129.5	122.0
Sydney	2,011.8	2,032.4	2,044.7	1,795.0
Toowoomba	48.8	49.2	49.3	42.6
Townsville (Thuringowa)	89.2	91.1	92.6	85.9
Wollongong	122.1	122.9	123.2	106.1

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Austria

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	9,674.8	0.57%		
2018	10,571.5	0.59%	2017-2018	9.3%
2019	9,589.5	0.57%	2018-2019	-9.3%
2020	8,529.4	0.55%	2019-2020	-11.1%
2021	9,487.4	0.54%	2020-2021	11.2%
2022	9,964.2	0.53%	2021-2022	5.0%
2023	10,415.4	0.51%	2022-2023	4.5%
2028	11,708.9	0.46%	CAGR 2023-2028	2.5%

<u>Euros</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Euros 000s)</u>	<u>Year-to-Year Change</u>	
2017	5,564.0		
2018	6,048.4	2017-2018	8.7%
2019	5,514.1	2018-2019	-8.8%
2020	4,635.9	2019-2020	-15.9%
2021	4,623.5	2020-2021	-0.3%
2022	4,600.6	2021-2022	-0.5%
2023	4,558.9	2022-2023	-0.9%
2028	3,713.7	CAGR 2023-2028	-18.5%

In 2022, sales for this product in Austria is forecast to be \$10.0 million dollars. Sales are forecast to change by 4.5 percent in the next year (2022 to 2023). In 2022, sales will be 4.6 million Euros and will change by -0.5 percent in the next year (2022 to 2023).

In 2028, sales for this product in Austria is forecast to be \$11.7 million dollars. The compound annual growth rate is projected to change by 2.5 percent from 2023 to 2028. In 2028, sales will be 4.6 million Euros and will change by -0.5 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Austria

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Amstetten	56.8	59.6	62.3	69.8
Baden	63.5	66.7	69.8	78.8
Bregenz	72.7	76.6	80.2	91.2
Dornbirn	113.8	119.8	125.5	142.8
Feldkirch	84.8	89.7	94.4	110.1
Graz	522.5	545.7	567.2	619.8
Hallein	54.2	57.3	60.3	70.2
Innsbruck	272.8	285.5	297.3	328.0
Judenburg	21.7	22.5	23.3	24.8
Kapfenberg	52.5	54.7	56.8	61.4
Klagenfurt am Wörthersee	229.4	240.8	251.6	282.1
Klosterneuburg	66.3	69.7	73.0	82.8
Krems an der Donau	59.4	62.4	65.2	73.0
Kufstein	43.2	45.6	48.0	55.5
Leoben	51.9	53.8	55.5	58.6
Leonding	62.6	66.1	69.4	79.8
Linz	425.1	443.7	460.9	502.0
Lustenau	54.6	57.6	60.4	69.3
Mödling	53.5	56.2	58.8	66.4
Saalfelden am Steinernen Meer	47.8	50.8	53.7	64.1
Salzburg	362.1	380.0	396.9	444.2
Spittal an der Drau	42.8	45.0	47.2	53.6
St. Pölten	118.2	123.7	128.9	142.4
Steyr	98.0	102.7	107.2	119.6
Telfs	51.4	55.3	59.1	74.7
Traun	62.7	66.0	69.2	78.7
Villach	153.4	161.5	169.2	192.4
Wels	152.0	160.1	167.9	191.5
Wien [Vienna]	3,860.8	4,049.3	4,226.8	4,716.8
Wiener Neustadt	98.1	103.2	108.1	122.4
Wolfsberg	64.8	68.1	71.2	80.1

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Note: Sales for 2018-2019 are forecasts and sales for 2020-2025 projections

Bangladesh

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

US Dollars	Market Sales	Pct. of Global		
Year	(USD 000s)	Market	Year-to-Year Change	
2017	5,918.1	0.35%		
2018	6,746.7	0.38%	2017-2018	14.0%
2019	7,427.6	0.44%	2018-2019	10.1%
2020	7,396.4	0.48%	2019-2020	-0.4%
2021	9,376.1	0.53%	2020-2021	26.8%
2022	11,222.5	0.59%	2021-2022	19.7%
2023	13,369.1	0.66%	2022-2023	19.1%
2028	28,894.5	1.13%	CAGR 2023-2028	23.2%

Takas	Market Sales		
Year	(Takas 000s)	Year-to-Year Change	
2017	304,222.7		
2018	374,357.7	2017-2018	23.1%
2019	401,777.0	2018-2019	7.3%
2020	362,900.5	2019-2020	-9.7%
2021	401,277.1	2020-2021	10.6%
2022	445,914.9	2021-2022	11.1%
2023	493,176.0	2022-2023	10.6%
2028	735,208.8	CAGR 2023-2028	49.1%

In 2022, sales for this product in Bangladesh is forecast to be \$11.2 million dollars. Sales are forecast to change by 19.1 percent in the next year (2022 to 2023). In 2022, sales will be 445.9 million Takas and will change by 11.1 percent in the next year (2022 to 2023).

In 2028, sales for this product in Bangladesh is forecast to be \$28.9 million dollars. The compound annual growth rate is projected to change by 23.2 percent from 2023 to 2028. In 2028, sales will be 445.9 million Takas and will change by 11.1 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Bangladesh

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Barisal	249.4	295.4	348.2	713.1
Chittagong	929.0	1,112.3	1,325.3	2,864.8
Brahmanbaria	90.0	107.6	127.9	273.5
Chittagong	256.1	307.2	366.8	800.3
Comilla	172.1	205.7	244.6	524.1
Noakhali	101.3	121.4	144.7	313.8
Dhaka	1,234.4	1,484.7	1,777.3	3,932.5
Dhaka	472.4	576.9	701.2	1,674.4
Gazipur	127.6	155.9	189.7	455.0
Kishoreganj	91.2	108.6	128.9	272.2
Narayanganj	103.3	124.9	150.3	341.0
Tangail	110.3	131.1	155.1	323.6
Mymensingh	345.0	411.2	487.7	1,030.2
Jalalpur	71.1	84.6	100.2	210.0
Mymensingh	161.5	192.6	228.7	485.9
Netrakona (Netrokona)	70.7	84.3	100.1	212.5
Khulna	493.1	587.0	695.4	1,461.3
Jessore	88.7	105.9	125.9	268.5
Khulna	71.9	85.3	100.8	208.1
Satkhira	62.7	74.6	88.4	186.1
Rajshahi	588.0	701.8	833.5	1,773.7
Bogra	106.9	127.4	151.2	320.0
Naogaon	80.2	95.3	112.8	235.8
Pabna	80.1	95.6	113.7	242.5
Rajshahi	85.3	102.1	121.6	262.5
Sirajganj	101.1	120.9	144.0	310.4
Rangpur	504.4	602.3	715.8	1,527.6
Dinajpur	96.1	114.8	136.4	291.6
Gaibandha	73.2	87.0	103.0	215.8
Kurigram	65.1	77.6	92.1	195.7
Rangpur	93.0	111.1	132.2	283.0
Sylhet	328.2	394.0	470.8	1,032.1
Habiganj	67.4	80.7	96.1	207.0
Sunamganj	81.5	97.8	116.8	255.1
Sylhet	116.9	141.0	169.2	378.8

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Note: Sales for 2018-2019 are forecasts and sales for 2020-2025 projections

Belgium

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	8,618.7	0.51%		
2018	9,146.7	0.51%	2017-2018	6.1%
2019	8,408.5	0.50%	2018-2019	-8.1%
2020	7,258.3	0.47%	2019-2020	-13.7%
2021	7,931.8	0.45%	2020-2021	9.3%
2022	8,184.2	0.43%	2021-2022	3.2%
2023	8,404.7	0.41%	2022-2023	2.7%
2028	8,647.9	0.34%	CAGR 2023-2028	0.6%

<u>Euros</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Euros 000s)</u>	<u>Year-to-Year Change</u>	
2017	4,961.1		
2018	5,233.2	2017-2018	5.5%
2019	4,835.0	2018-2019	-7.6%
2020	3,935.1	2019-2020	-18.6%
2021	3,849.6	2020-2021	-2.2%
2022	3,757.2	2021-2022	-2.4%
2023	3,652.0	2022-2023	-2.8%
2028	2,701.1	CAGR 2023-2028	-26.0%

In 2022, sales for this product in Belgium is forecast to be \$8.2 million dollars.

Sales are forecast to change by 2.7 percent in the next year (2022 to 2023). In 2022, sales will be 3.8 million Euros and will change by -2.4 percent in the next year (2022 to 2023).

In 2028, sales for this product in Belgium is forecast to be \$8.6 million dollars.

The compound annual growth rate is projected to change by 0.6 percent from 2023 to 2028. In 2028, sales will be 3.8 million Euros and will change by -2.4 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Belgium

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Vlaams Gewest [Flanders]	2,296.4	2,369.7	2,433.8	2,505.4
Antwerpen [Antwerp]	638.7	659.1	676.9	696.8
Limburg	314.7	325.3	334.7	347.6
Oost-Vlaanderen	518.9	535.0	548.9	562.3
Vlaams-Brabant	402.5	416.0	427.9	443.7
West-Vlaanderen	422.2	435.1	446.2	456.3
Wallonia	1,279.9	1,320.2	1,355.3	1,392.1
Brabant Wallon	150.8	156.6	161.9	172.1
Hainaut	465.7	479.1	490.5	497.1
Liège	387.4	399.4	409.8	419.7
Luxembourg	102.0	105.6	108.8	113.9
Namur	176.7	182.6	187.8	194.9
Brussels Gewest [Brussels]	387.9	400.2	411.0	422.9
Bruxelles-Capitale [Brussels]	387.9	400.2	411.0	422.9

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Brazil

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	29,782.6	1.76%		
2018	25,286.4	1.42%	2017-2018	-15.1%
2019	24,691.8	1.47%	2018-2019	-2.4%
2020	20,623.5	1.33%	2019-2020	-16.5%
2021	22,037.6	1.25%	2020-2021	6.9%
2022	22,074.0	1.16%	2021-2022	0.2%
2023	22,019.2	1.08%	2022-2023	-0.2%
2028	18,540.8	0.73%	CAGR 2023-2028	-3.2%

<u>Reals</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Reals 000s)</u>	<u>Year-to-Year Change</u>	
2017	61,474.1		
2018	62,426.0	2017-2018	1.5%
2019	62,696.1	2018-2019	0.4%
2020	50,658.2	2019-2020	-19.2%
2021	50,387.7	2020-2021	-0.5%
2022	50,003.1	2021-2022	-0.8%
2023	49,416.8	2022-2023	-1.2%
2028	39,717.5	CAGR 2023-2028	-19.6%

In 2022, sales for this product in Brazil is forecast to be \$22.1 million dollars.

Sales are forecast to change by -0.2 percent in the next year (2022 to 2023). In 2022, sales will be 50 million Reals and will change by -0.8 percent in the next year (2022 to 2023).

In 2028, sales for this product in Brazil is forecast to be \$18.5 million dollars.

The compound annual growth rate is projected to change by -3.2 percent from 2023 to 2028. In 2028, sales will be 50 million Reals and will change by -0.8 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Brazil

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Acre	95.9	97.4	98.5	89.0
Alagoas	349.4	349.0	347.2	288.1
Amapá	96.5	99.2	101.5	97.0
Amazonas	446.7	452.4	456.3	405.9
Bahia	1,544.7	1,539.4	1,527.8	1,253.6
Ceará	966.8	968.4	965.9	812.9
Distrito Federal	323.8	327.5	329.9	291.6
Espírito Santo	419.5	421.1	421.0	358.2
Goiás	742.8	749.1	752.3	655.0
Maranhão	749.7	751.1	749.5	631.6
Mato Grosso	370.9	373.9	375.4	326.3
Mato Grosso do Sul	291.2	292.6	292.7	250.0
Minas Gerais	2,211.1	2,209.0	2,197.8	1,826.0
Pará	924.5	932.5	936.7	816.4
Paraíba	415.3	414.0	410.9	337.6
Paraná	1,187.1	1,186.1	1,180.2	981.1
Pernambuco	993.3	992.4	987.4	820.5
Piauí	342.7	341.7	339.4	279.4
Rio de Janeiro	1,802.9	1,801.7	1,793.0	1,491.5
Rio Grande do Norte	367.2	367.9	367.1	309.5
Rio Grande do Sul	1,179.8	1,175.2	1,165.8	954.3
Rondônia	186.8	187.6	187.7	160.1
Roraima	64.7	66.3	67.7	63.8
Santa Catarina	748.6	752.2	752.7	643.6
São Paulo	4,803.7	4,812.0	4,800.4	4,041.9
Sergipe	243.4	244.4	244.4	208.2
Tocantins	168.4	169.7	170.3	147.8

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Canada

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	27,798.3	1.64%		
2018	28,938.8	1.62%	2017-2018	4.1%
2019	27,774.3	1.66%	2018-2019	-4.0%
2020	25,888.3	1.67%	2019-2020	-6.8%
2021	30,016.7	1.70%	2020-2021	15.9%
2022	32,623.8	1.72%	2021-2022	8.7%
2023	35,311.2	1.74%	2022-2023	8.2%
2028	44,721.6	1.75%	CAGR 2023-2028	5.3%

<u>Dollars</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Dollars 000s)</u>	<u>Year-to-Year Change</u>	
2017	23,397.8		
2018	25,336.0	2017-2018	8.3%
2019	23,721.5	2018-2019	-6.4%
2020	20,783.4	2019-2020	-12.4%
2021	21,399.3	2020-2021	3.0%
2022	21,982.7	2021-2022	2.7%
2023	22,488.8	2022-2023	2.3%
2028	21,484.1	CAGR 2023-2028	-4.5%

In 2022, sales for this product in Canada is forecast to be \$32.6 million dollars.

Sales are forecast to change by 8.2 percent in the next year (2022 to 2023). In 2022, sales will be 22 million Dollars and will change by 2.7 percent in the next year (2022 to 2023).

In 2028, sales for this product in Canada is forecast to be \$44.7 million dollars.

The compound annual growth rate is projected to change by 5.3 percent from 2023 to 2028. In 2028, sales will be 22 million Dollars and will change by 2.7 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Canada

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Alberta	3,632.8	3,988.6	4,361.2	5,808.7
British Columbia	3,933.3	4,275.1	4,627.3	5,859.3
Manitoba	1,081.6	1,174.4	1,269.8	1,599.3
New Brunswick	603.8	649.9	696.7	840.5
Newfoundland and Labrador	420.7	453.1	486.0	588.2
Northwest Territories	35.8	38.7	41.6	50.9
Nova Scotia	757.9	816.0	875.0	1,057.1
Nunavut	31.9	34.9	38.1	50.1
Ontario	11,599.3	12,604.5	13,640.1	17,253.4
Prince Edward Island	122.3	132.5	142.9	177.9
Québec [Quebec]	6,822.4	7,396.1	7,984.8	9,980.8
Saskatchewan	942.8	1,024.8	1,109.4	1,405.7
Yukon	32.2	35.2	38.3	49.9

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Chile

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	3,979.3	0.24%		
2018	4,304.8	0.24%	2017-2018	8.2%
2019	3,673.2	0.22%	2018-2019	-14.7%
2020	3,357.7	0.22%	2019-2020	-8.6%
2021	3,732.3	0.21%	2020-2021	11.2%
2022	3,888.9	0.21%	2021-2022	4.2%
2023	4,035.3	0.20%	2022-2023	3.8%
2028	4,138.7	0.16%	CAGR 2023-2028	0.5%

<u>Pesos</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Pesos 000s)</u>	<u>Year-to-Year Change</u>	
2017	1,681,633.8		
2018	1,865,246.7	2017-2018	10.9%
2019	1,662,024.5	2018-2019	-10.9%
2020	1,382,121.7	2019-2020	-16.8%
2021	1,363,432.6	2020-2021	-1.4%
2022	1,341,897.8	2021-2022	-1.6%
2023	1,315,256.3	2022-2023	-2.0%
2028	1,014,339.6	CAGR 2023-2028	-22.9%

In 2022, sales for this product in Chile is forecast to be \$3.9 million dollars. Sales are forecast to change by 3.8 percent in the next year (2022 to 2023). In 2022, sales will be 1341.9 million Pesos and will change by -1.6 percent in the next year (2022 to 2023).

In 2028, sales for this product in Chile is forecast to be \$4.1 million dollars. The compound annual growth rate is projected to change by 0.5 percent from 2023 to 2028. In 2028, sales will be 1341.9 million Pesos and will change by -1.6 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Chile

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Antofagasta	129.4	135.3	140.9	147.2
Arica y Parinacota	46.9	48.8	50.5	51.4
Atacama	61.6	64.2	66.5	68.0
Aisén	22.1	23.0	23.8	24.4
Biobío (Bío Bío)	427.3	443.2	457.8	459.0
Coquimbo	162.0	169.5	176.7	185.0
La Araucanía	200.9	208.6	215.6	217.1
O'Higgins	193.6	201.7	209.3	214.5
Los Lagos	175.1	182.4	189.1	193.5
Los Ríos	79.4	82.3	84.8	84.3
Magallanes y de la Antártica	34.0	35.2	36.4	36.2
Maule	218.2	226.8	234.7	237.6
Región Metro. de Santiago	1,527.5	1,593.8	1,656.2	1,710.4
Tarapacá	74.9	79.3	83.6	92.9
Valparaíso	379.3	394.8	409.1	417.1

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

China

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

US Dollars	Market Sales	Pct. of Global		
Year	(USD 000s)	Market	Year-to-Year Change	
2017	494,161.9	29.20%		
2018	530,340.0	29.75%	2017-2018	7.3%
2019	495,758.9	29.59%	2018-2019	-6.5%
2020	467,321.3	30.22%	2019-2020	-5.7%
2021	540,901.1	30.72%	2020-2021	15.7%
2022	591,134.0	31.18%	2021-2022	9.3%
2023	642,978.7	31.62%	2022-2023	8.8%
2028	881,877.6	34.60%	CAGR 2023-2028	7.4%

RMBs	Market Sales		
Year	(RMBs 000s)	Year-to-Year Change	
2017	2,140,463.7		
2018	2,370,738.7	2017-2018	10.8%
2019	2,204,676.1	2018-2019	-7.0%
2020	1,944,507.8	2019-2020	-11.8%
2021	2,003,321.6	2020-2021	3.0%
2022	2,074,160.6	2021-2022	3.5%
2023	2,137,354.6	2022-2023	3.0%
2028	2,237,207.1	CAGR 2023-2028	4.7%

In 2022, sales for this product in China is forecast to be \$591.1 million dollars.

Sales are forecast to change by 8.8 percent in the next year (2022 to 2023). In 2022, sales will be 2074.2 million RMBs and will change by 3.5 percent in the next year (2022 to 2023).

In 2028, sales for this product in China is forecast to be \$881.9 million dollars.

The compound annual growth rate is projected to change by 7.4 percent from 2023 to 2028. In 2028, sales will be 2074.2 million RMBs and will change by 3.5 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

China

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Anhui	22,761.3	24,777.5	26,843.9	36,073.5
Beijing	8,579.2	9,532.4	10,541.0	15,692.4
Chongqing	10,939.7	11,880.4	12,840.6	17,051.3
Fujian	14,977.3	16,409.1	17,892.2	24,829.5
Gansu	10,210.2	11,153.7	12,126.3	16,583.7
Guangdong	44,928.0	49,662.9	54,635.4	79,266.6
Guangxi	17,750.0	19,352.8	20,999.7	28,442.6
Guizhou	13,558.9	14,772.8	16,018.7	21,620.0
Hainan	3,484.4	3,822.3	4,172.9	5,827.0
Hebei	28,438.3	31,093.8	33,835.3	46,479.4
Heilongjiang	14,186.0	15,430.4	16,704.0	22,358.6
Henan	36,609.0	39,926.2	43,336.5	58,781.8
Hubei	22,414.5	24,411.8	26,460.3	35,643.7
Hunan	24,989.1	27,214.9	29,497.7	39,728.7
Jiangsu	30,492.5	33,296.1	36,184.3	49,381.4
Jiangxi	17,356.6	18,968.5	20,631.3	28,275.3
Jilin	10,530.3	11,473.8	12,442.3	16,798.9
Liaoning	16,655.1	18,146.3	19,676.8	26,558.2
Nei Menggu [Inner Mongolia]	9,580.4	10,456.2	11,357.7	15,462.5
Ningxia	2,657.4	2,924.5	3,203.0	4,544.8
Qinghai	2,217.3	2,429.2	2,648.7	3,675.1
Shaanxi	14,535.0	15,863.1	17,230.0	23,452.3
Shandong	37,100.1	40,487.4	43,973.6	59,835.5
Shanghai	9,745.2	10,794.7	11,900.4	17,446.5
Shanxi	14,318.7	15,682.5	17,094.3	23,683.7
Sichuan	25,639.4	27,574.3	29,513.9	37,329.0
Tianjin	5,202.5	5,728.7	6,278.0	8,934.3
Xinjiang	9,239.3	10,182.0	11,167.3	15,957.0
Xizang [Tibet]	1,255.2	1,380.7	1,511.5	2,139.8
Yunnan	18,555.3	20,325.7	22,158.9	30,723.7
Zhejiang	20,997.4	22,989.7	25,051.2	34,650.4
Zhejiang	20,997.4	22,989.7	25,051.2	34,650.4

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Czech Republic

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	7,116.9	0.42%		
2018	7,752.2	0.43%	2017-2018	8.9%
2019	7,406.3	0.44%	2018-2019	-4.5%
2020	6,753.8	0.44%	2019-2020	-8.8%
2021	7,726.3	0.44%	2020-2021	14.4%
2022	8,345.7	0.44%	2021-2022	8.0%
2023	8,972.1	0.44%	2022-2023	7.5%
2028	11,606.6	0.46%	CAGR 2023-2028	5.9%

<u>Korunas</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Korunas 000s)</u>	<u>Year-to-Year Change</u>	
2017	108,085.3		
2018	113,820.0	2017-2018	5.3%
2019	109,331.1	2018-2019	-3.9%
2020	90,821.2	2019-2020	-16.9%
2021	90,867.5	2020-2021	0.1%
2022	90,704.3	2021-2022	-0.2%
2023	90,168.1	2022-2023	-0.6%
2028	74,626.9	CAGR 2023-2028	-17.2%

In 2022, sales for this product in Czech Republic is forecast to be \$8.3 million dollars. Sales are forecast to change by 7.5 percent in the next year (2022 to 2023). In 2022, sales will be 90.7 million Korunas and will change by -0.2 percent in the next year (2022 to 2023).

In 2028, sales for this product in Czech Republic is forecast to be \$11.6 million dollars. The compound annual growth rate is projected to change by 5.9 percent from 2023 to 2028. In 2028, sales will be 90.7 million Korunas and will change by -0.2 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Czech Republic

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
South Bohemian Region	468.4	506.0	543.9	703.6
South Moravian Region	860.6	929.8	999.9	1,295.1
Karlovy Vary Region	217.6	234.5	251.6	322.0
Hradec Králové Region	400.1	431.3	462.6	591.9
Liberecký kraj [Liberec Region]	322.8	348.8	375.0	485.5
Moravian-Silesian Region	880.6	947.9	1,015.5	1,290.8
Olomouc Region	463.7	500.2	537.0	689.6
Pardubice Region	381.4	412.2	443.3	574.9
Plzeňský kraj [Plzeň Region]	421.8	455.7	490.1	634.6
Praha [Prague]	929.5	1,005.4	1,082.3	1,409.4
Central Bohemian Region	982.0	1,066.8	1,153.5	1,535.5
Ústecký kraj [Ústí Region]	599.2	646.2	693.6	890.0
Vysočina	371.5	400.5	429.6	550.2
Zlínský kraj [Zlín Region]	427.1	460.5	494.1	633.4

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Denmark

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	5,790.5	0.34%		
2018	6,341.2	0.36%	2017-2018	9.5%
2019	6,178.0	0.37%	2018-2019	-2.6%
2020	5,324.1	0.34%	2019-2020	-13.8%
2021	5,926.5	0.34%	2020-2021	11.3%
2022	6,229.1	0.33%	2021-2022	5.1%
2023	6,516.1	0.32%	2022-2023	4.6%
2028	7,353.1	0.29%	CAGR 2023-2028	2.6%

<u>Kroners</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Kroners 000s)</u>	<u>Year-to-Year Change</u>	
2017	24,839.7		
2018	27,055.2	2017-2018	8.9%
2019	26,523.7	2018-2019	-2.0%
2020	21,666.5	2019-2020	-18.3%
2021	21,669.2	2020-2021	0.0%
2022	21,622.0	2021-2022	-0.2%
2023	21,485.8	2022-2023	-0.6%
2028	17,748.3	CAGR 2023-2028	-17.4%

In 2022, sales for this product in Denmark is forecast to be \$6.2 million dollars.

Sales are forecast to change by 4.6 percent in the next year (2022 to 2023). In 2022, sales will be 21.6 million Kroners and will change by -0.2 percent in the next year (2022 to 2023).

In 2028, sales for this product in Denmark is forecast to be \$7.4 million dollars.

The compound annual growth rate is projected to change by 2.6 percent from 2023 to 2028. In 2028, sales will be 21.6 million Kroners and will change by -0.2 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Denmark

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Hovedstaden [Capital Region]	1,857.5	1,956.2	2,050.5	2,337.2
Midtjylland [Mid Jutland]	1,347.7	1,417.2	1,483.3	1,678.2
Nordjylland [North Jutland]	605.9	635.6	663.6	741.6
Sjælland [Zealand]	858.9	901.3	941.3	1,053.8
Syddanmark [South Denmark]	1,256.6	1,318.7	1,377.4	1,542.3

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Egypt

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	5,301.9	0.31%		
2018	5,569.9	0.31%	2017-2018	5.1%
2019	6,253.5	0.37%	2018-2019	12.3%
2020	5,118.7	0.33%	2019-2020	-18.1%
2021	5,612.2	0.32%	2020-2021	9.6%
2022	5,810.9	0.31%	2021-2022	3.5%
2023	5,989.4	0.29%	2022-2023	3.1%
2028	5,383.8	0.21%	CAGR 2023-2028	-2.0%

<u>Pounds</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Pounds 000s)</u>	<u>Year-to-Year Change</u>	
2017	50,781.7		
2018	66,560.9	2017-2018	31.1%
2019	70,687.6	2018-2019	6.2%
2020	70,292.1	2019-2020	-0.6%
2021	79,357.4	2020-2021	12.9%
2022	89,542.0	2021-2022	12.8%
2023	99,898.8	2022-2023	11.6%
2028	141,827.0	CAGR 2023-2028	42.0%

In 2022, sales for this product in Egypt is forecast to be \$5.8 million dollars.

Sales are forecast to change by 3.1 percent in the next year (2022 to 2023). In 2022, sales will be 89.5 million Pounds and will change by 12.8 percent in the next year (2022 to 2023).

In 2028, sales for this product in Egypt is forecast to be \$5.4 million dollars.

The compound annual growth rate is projected to change by -2 percent from 2023 to 2028. In 2028, sales will be 89.5 million Pounds and will change by 12.8 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Egypt

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Ad-Daqahiyah [Dakahlia]	380.5	393.2	404.5	360.0
Al-Baḥr al-Aḥmar [Red Sea]	23.0	24.1	25.2	24.3
Al-Buḥayrah [Beheira]	363.3	375.5	386.5	344.6
Al-Fayyūm [Fayoum]	215.6	224.5	232.8	215.5
Al-Gharbiyah [Gharbia]	292.3	301.4	309.3	272.1
Al-Iskandariyah [Alexandria]	304.3	314.4	323.4	287.5
Al-Ismā'īliyah [Ismailia]	78.6	81.9	84.9	78.5
Al-Jīzah [Giza]	518.4	539.6	559.1	515.8
Al-Minūfiyah [Monufia]	252.7	261.3	269.0	240.3
Al-Minyā	328.3	340.5	351.5	318.6
Al-Qāhirah [Cairo]	554.6	570.5	584.3	508.3
Al-Qalyūbyah [Qalyubia]	336.0	348.8	360.5	328.5
Al-Uqṣor [Luxor]	74.1	76.8	79.1	71.2
Al-Wādī al-Jadīd [New Valley]	14.5	15.0	15.5	14.1
Ash-Sharqiyah [Sharqia]	425.7	441.6	456.0	413.7
As-Suways [Suez]	43.2	44.9	46.5	42.6
Aswān	87.3	90.2	92.7	82.4
Asyūt	260.2	269.1	277.1	247.6
Banī Suwayf [Beni Suef]	187.8	195.0	201.6	183.9
Būr Sa'īd [Port Said]	44.0	45.5	46.9	42.0
Dumyāṭ [Damietta]	88.2	91.4	94.3	85.3
Kafr ash-Shaykh [Kafr el-Sheikh]	197.2	203.7	209.4	185.7
Maṭrūḥ [Matrouh]	26.7	28.0	29.1	27.5
Qinā [Qena]	187.8	194.2	199.9	178.5
Sawḥāj [Sohag]	294.1	304.5	313.8	282.0
Sīnā' al-Janūbiyah [South Sinai]	6.8	7.1	7.3	6.5
North Sinai	27.1	28.2	29.2	26.8

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Finland

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	5,299.0	0.31%		
2018	5,554.7	0.31%	2017-2018	4.8%
2019	5,026.2	0.30%	2018-2019	-9.5%
2020	4,348.9	0.28%	2019-2020	-13.5%
2021	4,730.5	0.27%	2020-2021	8.8%
2022	4,858.6	0.26%	2021-2022	2.7%
2023	4,966.5	0.24%	2022-2023	2.2%
2028	4,993.6	0.20%	CAGR 2023-2028	0.1%

<u>Euros</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Euros 000s)</u>	<u>Year-to-Year Change</u>	
2017	3,046.8		
2018	3,178.0	2017-2018	4.3%
2019	2,890.1	2018-2019	-9.1%
2020	2,359.2	2019-2020	-18.4%
2021	2,298.5	2020-2021	-2.6%
2022	2,234.1	2021-2022	-2.8%
2023	2,162.6	2022-2023	-3.2%
2028	1,566.8	CAGR 2023-2028	-27.5%

In 2022, sales for this product in Finland is forecast to be \$4.9 million dollars. Sales are forecast to change by 2.2 percent in the next year (2022 to 2023). In 2022, sales will be 2.2 million Euros and will change by -2.8 percent in the next year (2022 to 2023).

In 2028, sales for this product in Finland is forecast to be \$5.0 million dollars. The compound annual growth rate is projected to change by 0.1 percent from 2023 to 2028. In 2028, sales will be 2.2 million Euros and will change by -2.8 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Finland

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Åland [Åland Islands]	25.4	26.1	26.8	27.3
Etelä-Karjala [South Karelia]	109.1	111.3	113.0	109.6
South Ostrobothnia	160.4	163.7	166.3	162.1
Etelä-Savo [South Savonia]	122.9	124.9	126.3	120.3
Kainuu	61.2	62.1	62.7	59.2
Kanta-Häme [Tavastia Proper]	149.0	152.8	156.0	155.6
Central Ostrobothnia	58.1	59.5	60.5	59.7
Keski-Suomi [Central Finland]	236.4	242.5	247.4	246.6
Kymenlaakso (Kymmenedalen)	147.8	150.6	152.8	147.7
Lappi [Lapland]	149.3	152.1	154.2	148.5
Päijät-Häme [Päijänne Tavastia]	171.3	175.3	178.7	176.6
Pirkanmaa	441.9	455.1	466.4	475.0
Pohjanmaa [Ostrobothnia]	153.5	157.3	160.4	159.3
Pohjois-Karjala [North Karelia]	136.5	139.1	141.2	136.8
North Ostrobothnia	356.2	366.6	375.4	380.7
Pohjois-Savo [North Savonia]	206.9	211.3	214.7	209.3
Satakunta	184.8	188.4	191.1	185.0
Uusimaa (Nyland)	1,449.2	1,498.3	1,541.7	1,601.0
Southwest Finland	410.5	421.6	431.0	433.3

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

France

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	35,528.9	2.10%		
2018	37,804.4	2.12%	2017-2018	6.4%
2019	35,411.3	2.11%	2018-2019	-6.3%
2020	31,227.7	2.02%	2019-2020	-11.8%
2021	34,864.0	1.98%	2020-2021	11.6%
2022	36,486.1	1.92%	2021-2022	4.7%
2023	38,026.1	1.87%	2022-2023	4.2%
2028	39,863.6	1.56%	CAGR 2023-2028	1.0%

<u>Euros</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Euros 000s)</u>	<u>Year-to-Year Change</u>	
2017	20,413.2		
2018	21,629.3	2017-2018	6.0%
2019	20,362.2	2018-2019	-5.9%
2020	16,287.8	2019-2020	-20.0%
2021	15,879.2	2020-2021	-2.5%
2022	15,445.2	2021-2022	-2.7%
2023	14,961.1	2022-2023	-3.1%
2028	10,877.6	CAGR 2023-2028	-27.3%

In 2022, sales for this product in France is forecast to be \$36.5 million dollars.

Sales are forecast to change by 4.2 percent in the next year (2022 to 2023). In 2022, sales will be 15.4 million Euros and will change by -2.7 percent in the next year (2022 to 2023).

In 2028, sales for this product in France is forecast to be \$39.9 million dollars.

The compound annual growth rate is projected to change by 1 percent from 2023 to 2028. In 2028, sales will be 15.4 million Euros and will change by -2.7 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

France

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Auvergne - Rhône - Alpes	4,226.9	4,427.5	4,618.4	4,862.3
Bourgogne [Burgundy]	1,506.2	1,570.7	1,631.1	1,679.7
Bretagne [Brittany]	1,759.3	1,841.9	1,920.5	2,017.2
Centre - Val de Loire	1,419.8	1,484.6	1,545.9	1,613.6
Corse [Corsica]	171.5	180.1	188.3	200.5
Grand Est	2,995.2	3,125.0	3,247.0	3,352.4
Hauts-de-France	3,218.8	3,357.0	3,486.8	3,593.1
Île-de-France	6,575.9	6,883.4	7,175.6	7,530.4
Normandie [Normandy]	1,823.8	1,905.3	1,982.3	2,059.8
Nouvelle-Aquitaine	3,143.2	3,288.5	3,426.3	3,586.3
Pyrénées-Méditerranée	3,171.5	3,332.4	3,486.9	3,728.6
Pays de la Loire	1,998.9	2,095.4	2,187.5	2,312.2
Provence - Alpes - Côte d'Azur	2,853.0	2,994.3	3,129.6	3,327.6

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Germany

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	103,257.7	6.10%		
2018	110,476.9	6.20%	2017-2018	7.0%
2019	97,792.1	5.84%	2018-2019	-11.5%
2020	89,504.1	5.79%	2019-2020	-8.5%
2021	100,370.4	5.70%	2020-2021	12.1%
2022	105,507.3	5.57%	2021-2022	5.1%
2023	110,449.6	5.43%	2022-2023	4.7%
2028	118,383.5	4.64%	CAGR 2023-2028	1.4%

<u>Euros</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Euros 000s)</u>	<u>Year-to-Year Change</u>	
2017	59,383.3		
2018	63,208.0	2017-2018	6.4%
2019	56,232.4	2018-2019	-11.0%
2020	46,293.2	2019-2020	-17.7%
2021	45,100.3	2020-2021	-2.6%
2022	43,836.9	2021-2022	-2.8%
2023	42,433.3	2022-2023	-3.2%
2028	30,743.7	CAGR 2023-2028	-27.5%

In 2022, sales for this product in Germany is forecast to be \$105.5 million dollars. Sales are forecast to change by 4.7 percent in the next year (2022 to 2023). In 2022, sales will be 43.8 million Euros and will change by -2.8 percent in the next year (2022 to 2023).

In 2028, sales for this product in Germany is forecast to be \$118.4 million dollars. The compound annual growth rate is projected to change by 1.4 percent from 2023 to 2028. In 2028, sales will be 43.8 million Euros and will change by -2.8 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Germany

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Baden-Württemberg	13,432.9	14,151.2	14,846.4	16,084.7
Bayern [Bavaria]	15,920.1	16,785.2	17,624.2	19,172.7
Berlin	4,279.3	4,502.4	4,717.5	5,078.3
Brandenburg	3,030.7	3,180.6	3,324.2	3,533.7
Bremen	817.2	858.7	898.7	961.8
Hamburg	2,210.4	2,328.9	2,443.6	2,648.9
Hessen [Hesse]	7,570.4	7,966.0	8,347.5	8,991.1
Western Pomerania	1,910.6	1,995.8	2,076.2	2,155.9
Niedersachsen [Lower Saxony]	9,717.4	10,218.5	10,701.0	11,488.7
North Rhine-Westphalia	21,752.9	22,853.1	23,909.8	25,549.6
Rheinland-Pfalz	4,978.4	5,236.0	5,484.1	5,892.5
Saarland	1,194.5	1,250.0	1,302.6	1,364.9
Sachsen [Saxony]	4,841.7	5,060.7	5,267.7	5,487.0
Sachsen-Anhalt [Saxony-Anhalt]	2,613.4	2,719.7	2,818.6	2,872.6
Schleswig-Holstein	3,546.3	3,735.5	3,918.5	4,242.8
Thüringen [Thuringia]	2,554.3	2,664.9	2,768.9	2,858.1

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Hungary

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

US Dollars	Market Sales	Pct. of Global		
Year	(USD 000s)	Market	Year-to-Year Change	
2017	3,788.4	0.22%		
2018	4,034.8	0.23%	2017-2018	6.5%
2019	3,748.3	0.22%	2018-2019	-7.1%
2020	3,376.3	0.22%	2019-2020	-9.9%
2021	3,804.5	0.22%	2020-2021	12.7%
2022	4,018.7	0.21%	2021-2022	5.6%
2023	4,227.4	0.21%	2022-2023	5.2%
2028	4,642.2	0.18%	CAGR 2023-2028	2.0%

Forints	Market Sales		
Year	(Forints 000s)	Year-to-Year Change	
2017	675,453.8		
2018	736,640.5	2017-2018	9.1%
2019	701,315.6	2018-2019	-4.8%
2020	576,976.3	2019-2020	-17.7%
2021	575,053.8	2020-2021	-0.3%
2022	571,817.4	2021-2022	-0.6%
2023	566,254.1	2022-2023	-1.0%
2028	459,726.8	CAGR 2023-2028	-18.8%

In 2022, sales for this product in Hungary is forecast to be \$4.0 million dollars. Sales are forecast to change by 5.2 percent in the next year (2022 to 2023). In 2022, sales will be 571.8 million Forints and will change by -0.6 percent in the next year (2022 to 2023).

In 2028, sales for this product in Hungary is forecast to be \$4.6 million dollars. The compound annual growth rate is projected to change by 2 percent from 2023 to 2028. In 2028, sales will be 571.8 million Forints and will change by -0.6 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Hungary

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Bács-Kiskun	197.3	208.1	218.7	238.5
Baranya	142.4	150.0	157.3	169.9
Békés	131.2	137.9	144.2	153.9
Borsod-Abaúj-Zemplén	252.6	265.7	278.3	299.1
Budapest	654.9	689.5	722.8	780.1
Csongrád	156.6	165.2	173.5	189.0
Fejér	164.5	174.0	183.3	202.6
Győr-Moson-Sopron	179.3	190.1	200.8	224.8
Hajdú-Bihar	208.6	220.5	232.1	255.5
Heves	115.1	121.3	127.2	137.8
Jász-Nagykun-Szolnok	144.1	151.7	159.0	171.7
Komárom-Esztergom	116.0	122.5	128.8	140.8
Nógrád	74.3	78.1	81.8	87.7
Pest	510.8	546.1	581.5	678.1
Somogy	118.0	124.3	130.3	141.0
Szabolcs-Szatmár-Bereg	217.3	229.7	241.7	266.0
Tolna	85.4	89.9	94.2	101.5
Vas	97.7	103.1	108.3	117.9
Veszprém	133.1	140.3	147.4	160.4
Zala	105.2	110.8	116.3	125.9

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

India

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	54,038.6	3.19%		
2018	54,246.2	3.04%	2017-2018	0.4%
2019	49,604.9	2.96%	2018-2019	-8.6%
2020	46,006.2	2.98%	2019-2020	-7.3%
2021	52,024.9	2.95%	2020-2021	13.1%
2022	55,548.4	2.93%	2021-2022	6.8%
2023	59,030.3	2.90%	2022-2023	6.3%
2028	72,069.3	2.83%	CAGR 2023-2028	4.4%

<u>Rupees</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Rupees Mills)</u>	<u>Year-to-Year Change</u>	
2017	2,262.4		
2018	2,562.8	2017-2018	13.3%
2019	2,263.9	2018-2019	-11.7%
2020	1,943.1	2019-2020	-14.2%
2021	1,943.2	2020-2021	0.0%
2022	1,953.0	2021-2022	0.5%
2023	1,953.5	2022-2023	0.0%
2028	1,762.2	CAGR 2023-2028	-9.8%

In 2022, sales for this product in India is forecast to be \$55.5 million dollars. Sales are forecast to change by 6.3 percent in the next year (2022 to 2023). In 2022, sales will be 2 million Rupees and will change by 0.5 percent in the next year (2022 to 2023).

In 2028, sales for this product in India is forecast to be \$72.1 million dollars. The compound annual growth rate is projected to change by 4.4 percent from 2023 to 2028. In 2028, sales will be 2 million Rupees and will change by 0.5 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

India

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Andhra Pradesh	2,055.4	2,182.3	2,306.1	2,736.9
Arunāchal Pradesh	60.4	64.8	69.1	85.8
Assam	1,325.5	1,413.5	1,500.2	1,819.8
Bihār	4,574.5	4,903.7	5,231.7	6,513.5
Chandīgarh	48.4	51.9	55.5	69.6
Chhattīsgarh	1,080.8	1,153.9	1,226.1	1,496.1
Goa	61.2	65.0	68.8	81.9
Gujarāt	2,602.6	2,780.3	2,956.2	3,618.4
Haryāna	1,114.8	1,193.3	1,271.3	1,571.7
Himāchal Pradesh	290.3	309.1	327.6	394.3
Jammu & Kashmīr	554.0	593.9	633.6	788.8
Jhārkhand	1,423.1	1,521.8	1,619.7	1,992.5
Karnātaka	2,581.7	2,750.8	2,917.0	3,523.3
Kerala	1,370.1	1,451.5	1,530.3	1,796.0
Madhya Pradesh	3,145.2	3,362.7	3,578.2	4,396.9
Mahārāshtra	4,844.1	5,170.9	5,493.5	6,696.7
Manipur	123.8	132.5	141.2	174.6
Meghālaya	131.2	140.9	150.5	188.5
Odisha (Orissa)	1,765.7	1,879.8	1,991.7	2,395.6
Punjab	1,184.7	1,262.9	1,339.8	1,621.7
Rājasthān	3,013.0	3,226.4	3,438.5	4,258.2
Tamil Nādu	2,978.8	3,167.4	3,352.1	4,008.2
Telangana	1,483.4	1,580.1	1,675.0	2,019.9
Tripura	154.4	164.4	174.2	209.7
Uttarākhnd (Uttaranchal)	428.9	457.7	486.0	591.3
Uttar Pradesh	8,705.9	9,312.6	9,914.4	12,213.4
West Bengal	3,862.9	4,114.3	4,361.4	5,258.2

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Indonesia

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	28,053.7	1.66%		
2018	28,382.2	1.59%	2017-2018	1.2%
2019	28,591.2	1.71%	2018-2019	0.7%
2020	26,939.6	1.74%	2019-2020	-5.8%
2021	31,816.0	1.81%	2020-2021	18.1%
2022	35,221.9	1.86%	2021-2022	10.7%
2023	38,831.5	1.91%	2022-2023	10.2%
2028	53,921.7	2.12%	CAGR 2023-2028	7.8%

<u>Rupiahs</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Rupiahs Mill.)</u>	<u>Year-to-Year Change</u>	
2017	243,830.5		
2018	273,021.5	2017-2018	12.0%
2019	260,383.9	2018-2019	-4.6%
2020	230,088.3	2019-2020	-11.6%
2021	240,308.7	2020-2021	4.4%
2022	250,404.9	2021-2022	4.2%
2023	259,849.2	2022-2023	3.8%
2028	266,582.9	CAGR 2023-2028	2.6%

In 2022, sales for this product in Indonesia is forecast to be \$35.2 million dollars.

Sales are forecast to change by 10.2 percent in the next year (2022 to 2023). In 2022, sales will be 250.4 million Rupiahs and will change by 4.2 percent in the next year (2022 to 2023).

In 2028, sales for this product in Indonesia is forecast to be \$53.9 million dollars.

The compound annual growth rate is projected to change by 7.8 percent from 2023 to 2028. In 2028, sales will be 250.4 million Rupiahs and will change by 4.2 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Indonesia

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Aceh	629.7	699.0	772.6	1,086.6
Bali	537.1	597.3	661.4	938.9
Banten	1,482.5	1,648.3	1,825.1	2,587.8
Bengkulu	245.2	273.1	303.0	433.6
Gorontalo	139.8	154.9	170.9	238.3
Jakarta	1,240.8	1,369.0	1,504.1	2,052.2
Jambi	448.9	501.6	558.0	810.7
Jawa Barat [West Java]	5,734.2	6,345.2	6,992.0	9,680.6
Jawa Tengah [Central Java]	4,139.2	4,556.0	4,994.0	6,733.4
Jawa Timur [East Java]	4,779.4	5,264.8	5,775.3	7,817.4
West Borneo	616.1	684.0	756.3	1,064.6
South Borneo	512.0	569.7	631.4	899.1
Central Borneo	333.2	372.7	415.2	607.0
East Borneo	459.1	514.2	573.5	843.4
North Borneo	72.3	79.5	87.1	117.3
Bangka Belitung Islands	171.9	191.5	212.3	303.5
Kepulauan Riau [Riau Islands]	255.8	287.6	321.9	482.6
Lampung	1,020.0	1,129.0	1,244.4	1,725.2
Maluku [Moluccas]	178.3	194.7	211.7	274.5
Northern Moluccas	143.1	158.9	175.6	247.1
Western Lesser Sunda Islands	618.7	686.3	758.2	1,062.6
Eastern Lesser Sunda Islands	663.8	739.3	819.9	1,172.6
Papua (Irian Jaya)	422.0	475.0	532.4	802.4
Papua Barat [West Papua]	110.1	123.0	136.8	198.7
Riau	848.4	953.2	1,066.5	1,593.3
Sulbar [West Sulawesi]	159.2	176.8	195.6	276.0
[South Sulawesi]	1,037.6	1,144.2	1,256.4	1,709.4
Central Sulawesi	383.1	427.8	475.7	688.9
Southeast Sulawesi	338.9	379.7	423.7	624.7
North Sulawesi	270.5	295.8	322.1	420.4
Sumatera Barat [West Sumatra]	641.8	709.4	780.8	1,075.3
South Sumatra	979.0	1,081.9	1,190.6	1,637.6
North Sumatra	1,751.2	1,938.5	2,136.9	2,963.9
Yogyakarta	453.1	500.2	549.9	752.3

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Ireland

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	14,556.8	0.86%		
2018	16,992.8	0.95%	2017-2018	16.7%
2019	16,566.0	0.99%	2018-2019	-2.5%
2020	15,163.5	0.98%	2019-2020	-8.5%
2021	17,690.8	1.00%	2020-2021	16.7%
2022	19,487.6	1.03%	2021-2022	10.2%
2023	21,365.6	1.05%	2022-2023	9.6%
2028	30,489.3	1.20%	CAGR 2023-2028	8.5%

<u>Euros</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Euros 000s)</u>	<u>Year-to-Year Change</u>	
2017	8,371.6		
2018	9,722.2	2017-2018	16.1%
2019	9,525.8	2018-2019	-2.0%
2020	7,773.0	2019-2020	-18.4%
2021	7,836.2	2020-2021	0.8%
2022	7,939.1	2021-2022	1.3%
2023	8,005.3	2022-2023	0.8%
2028	7,517.6	CAGR 2023-2028	-6.1%

In 2022, sales for this product in Ireland is forecast to be \$19.5 million dollars. Sales are forecast to change by 9.6 percent in the next year (2022 to 2023). In 2022, sales will be 7.9 million Euros and will change by 1.3 percent in the next year (2022 to 2023).

In 2028, sales for this product in Ireland is forecast to be \$30.5 million dollars. The compound annual growth rate is projected to change by 8.5 percent from 2023 to 2028. In 2028, sales will be 7.9 million Euros and will change by 1.3 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Ireland

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Connacht	2,043.6	2,247.1	2,459.2	3,477.5
Leinster	9,851.8	10,873.8	11,945.0	17,212.3
Munster	4,682.5	5,141.3	5,618.3	7,886.5
Ulster (part of)	1,112.9	1,225.5	1,343.1	1,912.9

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Israel

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	5,841.1	0.35%		
2018	6,075.3	0.34%	2017-2018	4.0%
2019	5,563.4	0.33%	2018-2019	-8.4%
2020	5,122.0	0.33%	2019-2020	-7.9%
2021	5,791.3	0.33%	2020-2021	13.1%
2022	6,182.7	0.33%	2021-2022	6.8%
2023	6,569.3	0.32%	2022-2023	6.3%
2028	8,014.8	0.31%	CAGR 2023-2028	4.4%

<u>Shekels</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Shekels 000s)</u>	<u>Year-to-Year Change</u>	
2017	13,659.8		
2018	14,738.7	2017-2018	7.9%
2019	12,765.5	2018-2019	-13.4%
2020	10,890.1	2019-2020	-14.7%
2021	10,757.4	2020-2021	-1.2%
2022	10,601.8	2021-2022	-1.4%
2023	10,405.3	2022-2023	-1.9%
2028	8,079.0	CAGR 2023-2028	-22.4%

In 2022, sales for this product in Israel is forecast to be \$6.2 million dollars.

Sales are forecast to change by 6.3 percent in the next year (2022 to 2023). In 2022, sales will be 10.6 million Shekels and will change by -1.4 percent in the next year (2022 to 2023).

In 2028, sales for this product in Israel is forecast to be \$8.0 million dollars.

The compound annual growth rate is projected to change by 4.4 percent from 2023 to 2028. In 2028, sales will be 10.6 million Shekels and will change by -1.4 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Israel

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
HaDarom [Southern District]	916.1	984.0	1,051.9	1,322.0
HaMerkaz [Central District]	1,523.0	1,635.1	1,747.1	2,190.4
HaZafon [Northern District]	1,000.1	1,067.9	1,134.8	1,384.3
Hefa [Haifa]	680.6	722.0	762.3	900.5
Tel Aviv	906.6	955.3	1,001.8	1,144.1
Yerushalayim [Jerusalem]	764.9	818.4	871.3	1,073.4

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Italy

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

US Dollars	Market Sales	Pct. of Global	Year-to-Year Change	
Year	(USD 000s)	Market		
2017	40,178.0	2.37%		
2018	42,889.5	2.41%	2017-2018	6.7%
2019	38,695.2	2.31%	2018-2019	-9.8%
2020	35,456.5	2.29%	2019-2020	-8.4%
2021	40,009.2	2.27%	2020-2021	12.8%
2022	42,319.2	2.23%	2021-2022	5.8%
2023	44,578.0	2.19%	2022-2023	5.3%
2028	49,289.1	1.93%	CAGR 2023-2028	2.1%

Euros	Market Sales	Year-to-Year Change	
Year	(Euros 000s)		
2017	23,106.4		
2018	24,538.7	2017-2018	6.2%
2019	22,250.5	2018-2019	-9.3%
2020	18,481.1	2019-2020	-16.9%
2021	18,201.4	2020-2021	-1.5%
2022	17,884.7	2021-2022	-1.7%
2023	17,500.9	2022-2023	-2.1%
2028	13,387.0	CAGR 2023-2028	-23.5%

In 2022, sales for this product in Italy is forecast to be \$42.3 million dollars.

Sales are forecast to change by 5.3 percent in the next year (2022 to 2023). In 2022, sales will be 17.9 million Euros and will change by -1.7 percent in the next year (2022 to 2023).

In 2028, sales for this product in Italy is forecast to be \$49.3 million dollars.

The compound annual growth rate is projected to change by 2.1 percent from 2023 to 2028. In 2028, sales will be 17.9 million Euros and will change by -1.7 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Italy

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Abruzzo	873.1	923.0	971.8	1,071.5
Basilicata	371.0	390.2	408.8	439.5
Calabria	1,272.3	1,339.1	1,403.6	1,513.6
Campania	3,848.4	4,064.9	4,275.8	4,693.9
Emilia-Romagna	2,972.6	3,152.1	3,328.7	3,726.4
Friuli-Venezia Giulia	803.0	847.8	891.4	976.4
Lazio [Latium]	3,853.8	4,087.0	4,316.3	4,834.5
Liguria	1,009.3	1,061.9	1,112.7	1,198.0
Lombardia [Lombardy]	6,672.8	7,074.5	7,469.5	8,354.8
Marche	1,030.4	1,090.8	1,150.0	1,276.7
Molise	201.5	212.0	222.1	239.1
Piemonte [Piedmont]	2,881.8	3,042.9	3,199.7	3,506.5
Puglia [Apulia]	2,669.1	2,816.2	2,959.2	3,231.5
Sardegna [Sardinia]	1,081.7	1,141.1	1,198.8	1,307.7
Sicilia [Sicily]	3,311.2	3,494.6	3,672.9	4,015.8
Toscana [Tuscany]	2,465.0	2,606.7	2,745.1	3,031.0
Trentino-Alto Adige	718.9	763.9	808.3	914.1
Umbria	593.1	628.0	662.2	736.0
Valle d'Aosta (Vallée d'Aoste)	84.9	89.9	94.8	105.3
Veneto [Venetia]	3,295.4	3,492.7	3,686.5	4,116.8

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Japan

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	138,189.4	8.17%		
2018	140,927.5	7.91%	2017-2018	2.0%
2019	135,569.8	8.09%	2018-2019	-3.8%
2020	127,777.6	8.26%	2019-2020	-5.7%
2021	137,985.8	7.84%	2020-2021	8.0%
2022	147,316.3	7.77%	2021-2022	6.8%
2023	156,534.4	7.70%	2022-2023	6.3%
2028	191,013.2	7.49%	CAGR 2023-2028	4.4%

<u>Yen</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Yen Mills)</u>	<u>Year-to-Year Change</u>	
2017	10,055.8		
2018	10,514.5	2017-2018	4.6%
2019	9,513.2	2018-2019	-9.5%
2020	8,030.3	2019-2020	-15.6%
2021	7,967.0	2020-2021	-0.8%
2022	7,886.0	2021-2022	-1.0%
2023	7,773.6	2022-2023	-1.4%
2028	6,168.4	CAGR 2023-2028	-20.6%

In 2022, sales for this product in Japan is forecast to be \$147.3 million dollars. Sales are forecast to change by 6.3 percent in the next year (2022 to 2023). In 2022, sales will be 7.9 million Yen and will change by -1 percent in the next year (2022 to 2023).

In 2028, sales for this product in Japan is forecast to be \$191.0 million dollars. The compound annual growth rate is projected to change by 4.4 percent from 2023 to 2028. In 2028, sales will be 7.9 million Yen and will change by -1 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Japan

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Aichi	8,278.2	8,869.8	9,458.5	11,747.2
Akita	1,076.9	1,139.4	1,199.9	1,399.4
Aomori	1,396.5	1,481.0	1,563.2	1,844.5
Chiba	6,887.2	7,375.3	7,860.7	9,736.7
Ehime	1,471.3	1,563.0	1,652.5	1,966.4
Fukui	844.1	898.3	951.3	1,141.8
Fukuoka	5,484.7	5,857.0	6,224.8	7,602.5
Fukushima	2,092.6	2,223.1	2,350.6	2,797.9
Gifu	2,201.5	2,345.4	2,486.8	3,001.5
Gumma (Gunma)	2,139.3	2,280.7	2,419.8	2,930.8
Hiroshima	3,020.7	3,218.5	3,412.9	4,121.6
Hokkaidō	5,736.5	6,101.5	6,458.9	7,732.7
Hyōgo	6,087.8	6,503.4	6,914.5	8,460.9
Ibaraki	3,159.7	3,368.8	3,574.7	4,331.5
Ishikawa	1,232.0	1,312.4	1,391.4	1,678.7
Iwate	1,361.9	1,445.4	1,526.7	1,808.2
Kagawa	1,036.6	1,102.7	1,167.5	1,398.7
Kagoshima	1,756.6	1,866.1	1,973.0	2,348.0
Kanagawa	10,211.8	10,953.8	11,693.9	14,604.9
Kōchi	782.2	830.1	876.8	1,038.1
Kumamoto	1,901.1	2,023.3	2,143.1	2,573.8
Kyōto	2,804.3	2,989.8	3,172.4	3,843.2
Mie	1,983.6	2,115.5	2,245.6	2,725.3
Miyagi	2,509.8	2,676.5	2,840.8	3,446.3
Miyazaki	1,176.6	1,251.2	1,324.2	1,583.7
Nagano	2,266.1	2,412.4	2,555.9	3,073.3
Nagasaki	1,440.0	1,526.9	1,611.4	1,899.6
Nara	1,467.2	1,561.5	1,653.9	1,986.2
Niigata	2,447.1	2,600.3	2,749.9	3,276.0
Ōita	1,244.3	1,323.8	1,401.7	1,680.5
Okayama	2,063.0	2,198.8	2,332.4	2,821.7
Okinawa	1,572.2	1,686.0	1,799.5	2,244.7
Ōsaka	9,424.3	10,050.8	10,668.0	12,944.2
Saga	879.4	934.9	989.2	1,181.7
Saitama	7,945.9	8,504.5	9,059.3	11,191.1

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

South Korea

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	61,336.5	3.62%		
2018	62,860.8	3.53%	2017-2018	2.5%
2019	54,068.9	3.23%	2018-2019	-14.0%
2020	51,658.6	3.34%	2019-2020	-4.5%
2021	58,666.6	3.33%	2020-2021	13.6%
2022	62,452.9	3.29%	2021-2022	6.5%
2023	66,209.3	3.26%	2022-2023	6.0%
2028	75,591.1	2.97%	CAGR 2023-2028	2.8%

<u>Won</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Won Mills)</u>	<u>Year-to-Year Change</u>	
2017	42,462.3		
2018	46,741.6	2017-2018	10.1%
2019	40,560.5	2018-2019	-13.2%
2020	35,242.3	2019-2020	-13.1%
2021	35,310.1	2020-2021	0.2%
2022	35,296.6	2021-2022	0.0%
2023	35,137.6	2022-2023	-0.5%
2028	29,287.5	CAGR 2023-2028	-16.6%

In 2022, sales for this product in South Korea is forecast to be \$62.5 million dollars. Sales are forecast to change by 6 percent in the next year (2022 to 2023). In 2022, sales will be 35.3 million Won and will change by 0 percent in the next year (2022 to 2023).

In 2028, sales for this product in South Korea is forecast to be \$75.6 million dollars. The compound annual growth rate is projected to change by 2.8 percent from 2023 to 2028. In 2028, sales will be 35.3 million Won and will change by 0 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

South Korea

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Busan (Pusan)	3,533.2	3,702.3	3,862.8	4,061.4
North Chungcheong	1,768.3	1,875.4	1,980.5	2,212.1
South Chungcheong	2,270.5	2,412.0	2,551.3	2,872.7
Daegu (Taegu)	2,738.6	2,890.4	3,037.5	3,310.8
Daejeon (Taejŏn)	1,888.0	2,015.2	2,141.7	2,469.2
Gangwon-do (Kangwŏn-do)	1,642.2	1,733.4	1,821.8	1,986.9
Gwangju (Kwangju)	1,845.0	1,968.3	2,090.8	2,404.6
Gyeonggi-do (Kyŏnggi-do)	16,958.7	18,388.4	19,853.0	24,765.9
North Gyeongsang	2,829.8	2,979.4	3,123.5	3,363.8
South Gyeongsang	3,751.0	3,984.0	4,213.4	4,740.1
Incheon (Inch'ŏn)	3,258.4	3,470.8	3,681.3	4,201.9
Jeju-do (Cheju-do)	621.2	658.2	694.5	772.2
Jeollabuk-do [North Jeolla]	1,873.1	1,967.0	2,056.7	2,186.2
Jeollanam-do [South Jeolla]	1,718.1	1,791.8	1,860.7	1,910.7
Sejong	92.0	97.2	102.3	112.4
Seoul (Sŏul)	10,571.8	11,129.1	11,665.6	12,553.3
Ulsan	1,307.0	1,390.0	1,471.9	1,666.8

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Malaysia

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	9,549.8	0.56%		
2018	10,600.7	0.59%	2017-2018	11.0%
2019	10,139.4	0.61%	2018-2019	-4.4%
2020	9,705.1	0.63%	2019-2020	-4.3%
2021	11,500.7	0.65%	2020-2021	18.5%
2022	12,775.0	0.67%	2021-2022	11.1%
2023	14,132.0	0.69%	2022-2023	10.6%
2028	19,958.7	0.78%	CAGR 2023-2028	8.2%

<u>Ringgits</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Ringgits 000s)</u>	<u>Year-to-Year Change</u>	
2017	26,681.1		
2018	28,901.6	2017-2018	8.3%
2019	27,037.9	2018-2019	-6.4%
2020	24,074.3	2019-2020	-11.0%
2021	25,035.6	2020-2021	4.0%
2022	25,975.2	2021-2022	3.8%
2023	26,839.0	2022-2023	3.3%
2028	26,947.6	CAGR 2023-2028	0.4%

In 2022, sales for this product in Malaysia is forecast to be \$12.8 million dollars.

Sales are forecast to change by 10.6 percent in the next year (2022 to 2023). In 2022, sales will be 26 million Ringgits and will change by 3.8 percent in the next year (2022 to 2023).

In 2028, sales for this product in Malaysia is forecast to be \$20.0 million dollars.

The compound annual growth rate is projected to change by 8.2 percent from 2023 to 2028. In 2028, sales will be 26 million Ringgits and will change by 3.8 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Malaysia

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Johor	1,328.2	1,472.5	1,625.7	2,270.0
Kedah	755.3	834.6	918.4	1,261.5
Kelantan	616.6	680.5	747.9	1,021.2
Kuala Lumpur	624.1	688.0	755.3	1,025.7
Labuan	35.4	39.3	43.4	60.8
Melaka [Malacca]	325.7	361.4	399.3	560.0
Negeri Sembilan	393.8	435.0	478.4	656.0
Pahang	578.0	638.0	701.3	958.0
Perak	846.1	927.8	1,013.2	1,339.2
Perlis	85.6	94.0	102.8	137.0
Pinang (Pulau Pinang) [Penang]	610.2	674.3	741.9	1,019.0
Putrajaya	39.0	46.2	54.4	105.8
Sabah	1,400.4	1,563.9	1,739.1	2,518.4
Sarawak	971.4	1,074.4	1,183.3	1,632.7
Selangor	2,479.8	2,791.5	3,129.1	4,714.9
Terengganu	411.3	453.7	498.4	678.7

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Mexico

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	27,371.9	1.62%		
2018	28,988.9	1.63%	2017-2018	5.9%
2019	28,510.5	1.70%	2018-2019	-1.7%
2020	24,955.0	1.61%	2019-2020	-12.5%
2021	28,101.7	1.60%	2020-2021	12.6%
2022	29,663.5	1.56%	2021-2022	5.6%
2023	31,182.9	1.53%	2022-2023	5.1%
2028	34,127.7	1.34%	CAGR 2023-2028	1.9%

<u>New Pesos</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(New Pesos 000s)</u>	<u>Year-to-Year Change</u>	
2017	336,568.4		
2018	376,936.6	2017-2018	12.0%
2019	353,540.9	2018-2019	-6.2%
2020	310,981.5	2019-2020	-12.0%
2021	322,044.9	2020-2021	3.6%
2022	332,733.6	2021-2022	3.3%
2023	342,359.3	2022-2023	2.9%
2028	336,610.4	CAGR 2023-2028	-1.7%

In 2022, sales for this product in Mexico is forecast to be \$29.7 million dollars.

Sales are forecast to change by 5.1 percent in the next year (2022 to 2023). In 2022, sales will be 332.7 million New Pesos and will change by 3.3 percent in the next year (2022 to 2023).

In 2028, sales for this product in Mexico is forecast to be \$34.1 million dollars.

The compound annual growth rate is projected to change by 1.9 percent from 2023 to 2028. In 2028, sales will be 332.7 million New Pesos and will change by 3.3 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Mexico

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Aguascalientes	319.9	340.0	359.9	407.6
Baja California	913.3	976.0	1,038.6	1,207.7
Baja California Sur	193.9	209.0	224.3	272.5
Campeche	211.3	223.5	235.5	260.2
Chiapas	1,261.4	1,337.9	1,413.2	1,582.9
Chihuahua	854.9	901.2	946.0	1,027.3
Ciudad de México	1,984.9	2,070.8	2,151.5	2,218.9
Coahuila	695.0	734.6	773.2	850.7
Colima	167.7	177.7	187.5	208.8
Durango	382.1	401.0	419.1	445.3
Guanajuato	1,353.8	1,428.6	1,501.2	1,638.6
Guerrero	800.3	840.4	878.8	936.1
Hidalgo	660.1	697.1	733.1	803.4
Jalisco	1,822.4	1,922.0	2,018.6	2,197.5
México	3,941.6	4,170.8	4,395.0	4,864.8
Michoacán	994.9	1,042.3	1,087.4	1,145.0
Morelos	438.1	461.9	484.9	527.0
Nayarit	258.8	272.5	285.8	308.8
Nuevo León	1,208.7	1,280.4	1,350.8	1,503.8
Oaxaca	909.8	956.2	1,000.9	1,071.3
Puebla	1,463.4	1,544.9	1,624.1	1,776.6
Querétaro	511.9	546.3	580.5	670.3
Quintana Roo	456.1	495.5	536.0	676.7
San Luis Potosí	622.6	654.7	685.5	735.3
Sinaloa	653.4	685.6	716.3	760.1
Sonora	675.1	713.8	751.7	829.0
Tabasco	564.0	596.1	627.5	690.8
Tamaulipas	850.7	900.5	949.3	1,052.9
Tlaxcala	308.4	327.0	345.3	386.0
Veracruz	1,784.5	1,871.8	1,955.2	2,071.3
Yucatán	498.5	526.8	554.4	609.4
Zacatecas	340.3	356.5	371.9	391.2

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Netherlands

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	12,625.3	0.75%		
2018	13,918.8	0.78%	2017-2018	10.2%
2019	12,715.9	0.76%	2018-2019	-8.6%
2020	11,487.8	0.74%	2019-2020	-9.7%
2021	12,913.1	0.73%	2020-2021	12.4%
2022	13,705.4	0.72%	2021-2022	6.1%
2023	14,477.6	0.71%	2022-2023	5.6%
2028	17,154.1	0.67%	CAGR 2023-2028	3.7%

<u>Euros</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Euros 000s)</u>	<u>Year-to-Year Change</u>	
2017	7,260.8		
2018	7,963.5	2017-2018	9.7%
2019	7,311.9	2018-2019	-8.2%
2020	6,236.2	2019-2020	-14.7%
2021	6,280.7	2020-2021	0.7%
2022	6,311.0	2021-2022	0.5%
2023	6,315.2	2022-2023	0.1%
2028	5,402.3	CAGR 2023-2028	-14.5%

In 2022, sales for this product in Netherlands is forecast to be \$13.7 million dollars. Sales are forecast to change by 5.6 percent in the next year (2022 to 2023). In 2022, sales will be 6.3 million Euros and will change by 0.5 percent in the next year (2022 to 2023).

In 2028, sales for this product in Netherlands is forecast to be \$17.2 million dollars. The compound annual growth rate is projected to change by 3.7 percent from 2023 to 2028. In 2028, sales will be 6.3 million Euros and will change by 0.5 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Netherlands

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Drenthe	371.1	393.0	414.2	485.3
Flevoland	322.3	345.1	367.8	455.3
Fryslân (Friesland)	486.7	515.1	542.6	633.8
Gelderland	1,546.8	1,640.6	1,731.9	2,045.0
Groningen	437.1	462.7	487.5	570.0
Limburg	828.7	874.6	918.7	1,058.1
Noord-Brabant [North Brabant]	1,895.5	2,010.5	2,122.3	2,506.0
Noord-Holland [North Holland]	2,130.7	2,266.1	2,398.6	2,870.9
Overijssel	868.3	920.7	971.7	1,146.1
Utrecht	990.1	1,055.8	1,120.5	1,359.3
Zeeland [Zealand]	286.6	303.3	319.3	372.2
Zuid-Holland [South Holland]	2,749.3	2,918.0	3,082.4	3,652.1

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Nigeria

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	4,499.8	0.27%		
2018	5,266.9	0.30%	2017-2018	17.0%
2019	6,695.1	0.40%	2018-2019	27.1%
2020	5,545.8	0.36%	2019-2020	-17.2%
2021	6,495.8	0.37%	2020-2021	17.1%
2022	7,185.0	0.38%	2021-2022	10.6%
2023	7,911.5	0.39%	2022-2023	10.1%
2028	9,895.1	0.39%	CAGR 2023-2028	5.0%

<u>Nairas</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Nairas 000s)</u>	<u>Year-to-Year Change</u>	
2017	893,944.8		
2018	1,153,751.8	2017-2018	29.1%
2019	1,400,669.1	2018-2019	21.4%
2020	1,207,563.9	2019-2020	-13.8%
2021	1,364,308.2	2020-2021	13.0%
2022	1,549,050.7	2021-2022	13.5%
2023	1,750,496.4	2022-2023	13.0%
2028	2,906,015.2	CAGR 2023-2028	66.0%

In 2022, sales for this product in Nigeria is forecast to be \$7.2 million dollars.

Sales are forecast to change by 10.1 percent in the next year (2022 to 2023). In 2022, sales will be 1549.1 million Nairas and will change by 13.5 percent in the next year (2022 to 2023).

In 2028, sales for this product in Nigeria is forecast to be \$9.9 million dollars.

The compound annual growth rate is projected to change by 5 percent from 2023 to 2028. In 2028, sales will be 1549.1 million Nairas and will change by 13.5 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Nigeria

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Abia	118.6	129.8	141.4	167.3
Adamawa	141.8	156.4	171.7	211.6
Akwa Ibom	183.9	203.6	224.3	281.3
Anambra	184.4	203.3	223.0	273.8
Bauchi	219.5	243.0	267.8	336.1
Bayelsa	76.1	84.0	92.2	113.7
Benue	192.2	212.2	233.2	288.7
Borno	197.3	218.5	240.9	303.0
Cross River	129.1	142.4	156.3	192.6
Delta	189.9	210.0	231.1	288.2
Ebonyi	104.5	116.6	129.4	168.8
Edo	141.5	155.9	171.0	209.6
Ekiti	109.5	121.0	133.1	165.3
Enugu	147.5	162.8	178.9	221.3
Federal Capital Territory	128.0	148.0	170.4	265.6
Imo	181.2	200.3	220.4	274.6
Jigawa	194.7	214.7	235.8	290.7
Kaduna	276.6	305.5	335.8	416.1
Kano	439.6	486.5	535.9	671.2
Katsina	262.2	289.5	318.2	393.9
Kebbi	149.0	164.6	181.1	225.2
Kogi	149.7	165.3	181.6	224.8
Lagos	421.2	465.8	512.7	639.5
Niger	186.8	206.8	227.9	286.3
Ogun	175.1	193.8	213.4	266.9
Ondo	156.2	172.5	189.5	234.4
Osun	157.7	174.4	191.9	239.1
Oyo	262.9	291.0	320.6	402.0
Plateau	141.1	155.6	170.8	210.2
Rivers	245.4	271.7	299.5	376.1
Sokoto	166.9	184.3	202.4	250.2
Taraba	102.5	113.0	124.1	153.0
Yobe	110.9	122.9	135.5	170.9
Zamfara	151.7	167.8	184.7	230.5

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Note: Sales for 2018-2019 are forecasts and sales for 2020-2025 projections

Norway

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

US Dollars	Market Sales	Pct. of Global		
Year	(USD 000s)	Market	Year-to-Year Change	
2017	3,493.0	0.21%		
2018	3,511.1	0.20%	2017-2018	0.5%
2019	3,319.7	0.20%	2018-2019	-5.5%
2020	2,882.8	0.19%	2019-2020	-13.2%
2021	3,234.0	0.18%	2020-2021	12.2%
2022	3,393.6	0.18%	2021-2022	4.9%
2023	3,539.8	0.17%	2022-2023	4.3%
2028	3,137.4	0.12%	CAGR 2023-2028	-2.3%

Krones	Market Sales		
Year	(Krones 000s)	Year-to-Year Change	
2017	18,771.3		
2018	19,293.3	2017-2018	2.8%
2019	18,805.3	2018-2019	-2.5%
2020	15,473.4	2019-2020	-17.7%
2021	15,720.2	2020-2021	1.6%
2022	15,901.2	2021-2022	1.2%
2023	15,987.7	2022-2023	0.5%
2028	11,792.2	CAGR 2023-2028	-26.2%

In 2022, sales for this product in Norway is forecast to be \$3.4 million dollars. Sales are forecast to change by 4.3 percent in the next year (2022 to 2023). In 2022, sales will be 15.9 million Kroner and will change by 1.2 percent in the next year (2022 to 2023).

In 2028, sales for this product in Norway is forecast to be \$3.1 million dollars. The compound annual growth rate is projected to change by -2.3 percent from 2023 to 2028. In 2028, sales will be 15.9 million Kroner and will change by 1.2 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Norway

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Akershus	379.0	400.0	419.6	382.4
Aust-Agder	71.4	74.8	77.8	68.4
Buskerud	171.6	180.0	187.7	166.1
Finnmark (Finnmárku)	45.6	47.4	49.1	41.9
Hedmark	119.0	124.1	128.6	110.3
Hordaland	319.3	335.2	349.8	310.6
Møre og Romsdal	161.1	168.3	174.8	151.5
Nordland	146.2	152.2	157.5	134.1
Oppland	114.9	119.7	124.0	106.1
Oslo	414.0	436.8	458.1	417.1
Østfold	179.9	188.7	196.7	173.8
Rogaland	293.9	309.7	324.4	293.4
Sogn og Fjordane	66.5	69.3	71.8	61.3
Telemark	105.1	109.6	113.6	97.6
Troms (Romsa)	100.8	105.3	109.4	95.1
Trøndelag	278.2	291.6	303.8	267.4
Vest-Agder	114.4	120.2	125.4	111.6
Vestfold	153.2	160.8	167.7	148.6

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Pakistan

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	5,006.1	0.30%		
2018	5,254.4	0.29%	2017-2018	5.0%
2019	4,493.9	0.27%	2018-2019	-14.5%
2020	4,086.8	0.26%	2019-2020	-9.1%
2021	4,526.3	0.26%	2020-2021	10.8%
2022	4,699.2	0.25%	2021-2022	3.8%
2023	4,858.6	0.24%	2022-2023	3.4%
2028	4,893.8	0.19%	CAGR 2023-2028	0.1%

<u>Rupees</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Rupees 000s)</u>	<u>Year-to-Year Change</u>	
2017	340,883.3		
2018	390,682.9	2017-2018	14.6%
2019	394,819.6	2018-2019	1.1%
2020	342,592.6	2019-2020	-13.2%
2021	361,868.9	2020-2021	5.6%
2022	381,349.2	2021-2022	5.4%
2023	400,220.7	2022-2023	4.9%
2028	434,411.9	CAGR 2023-2028	8.5%

In 2022, sales for this product in Pakistan is forecast to be \$4.7 million dollars. Sales are forecast to change by 3.4 percent in the next year (2022 to 2023). In 2022, sales will be 381.3 million Rupees and will change by 5.4 percent in the next year (2022 to 2023).

In 2028, sales for this product in Pakistan is forecast to be \$4.9 million dollars. The compound annual growth rate is projected to change by 0.1 percent from 2023 to 2028. In 2028, sales will be 381.3 million Rupees and will change by 5.4 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Pakistan

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Balochistān	278.0	290.9	303.2	317.8
Tribal Areas	97.8	100.6	103.1	99.3
Islāmābād	45.6	48.4	51.1	57.4
Khyber Pakhtūnkhwā	660.2	687.1	712.2	726.2
Punjāb	2,390.4	2,476.6	2,555.3	2,546.6
Sindh	1,054.4	1,095.6	1,133.7	1,146.6

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Philippines

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

US Dollars	Market Sales	Pct. of Global		
Year	(USD 000s)	Market	Year-to-Year Change	
2017	8,754.4	0.52%		
2018	9,081.2	0.51%	2017-2018	3.7%
2019	9,047.2	0.54%	2018-2019	-0.4%
2020	8,644.3	0.56%	2019-2020	-4.5%
2021	10,281.7	0.58%	2020-2021	18.9%
2022	11,463.3	0.60%	2021-2022	11.5%
2023	12,728.0	0.63%	2022-2023	11.0%
2028	18,312.0	0.72%	CAGR 2023-2028	8.8%

Pesos	Market Sales		
Year	(Pesos 000s)	Year-to-Year Change	
2017	273,703.9		
2018	323,123.1	2017-2018	18.1%
2019	301,652.0	2018-2019	-6.6%
2020	280,554.6	2019-2020	-7.0%
2021	301,680.5	2020-2021	7.5%
2022	323,649.9	2021-2022	7.3%
2023	345,787.2	2022-2023	6.8%
2028	410,387.4	CAGR 2023-2028	18.7%

In 2022, sales for this product in Philippines is forecast to be \$11.5 million dollars. Sales are forecast to change by 11 percent in the next year (2022 to 2023). In 2022, sales will be 323.6 million Pesos and will change by 7.3 percent in the next year (2022 to 2023).

In 2028, sales for this product in Philippines is forecast to be \$18.3 million dollars. The compound annual growth rate is projected to change by 8.8 percent from 2023 to 2028. In 2028, sales will be 323.6 million Pesos and will change by 7.3 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Philippines

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Luzon	5,901.9	6,588.8	7,325.3	10,607.2
Mindanao	2,461.0	2,745.1	3,049.3	4,396.4
Visayas	1,918.8	2,129.5	2,353.5	3,308.3

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Poland

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	12,683.8	0.75%		
2018	13,510.0	0.76%	2017-2018	6.5%
2019	12,855.6	0.77%	2018-2019	-4.8%
2020	11,213.6	0.73%	2019-2020	-12.8%
2021	12,440.8	0.71%	2020-2021	10.9%
2022	13,032.1	0.69%	2021-2022	4.8%
2023	13,587.1	0.67%	2022-2023	4.3%
2028	15,077.7	0.59%	CAGR 2023-2028	2.2%

<u>Zlotys</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Zlotys 000s)</u>	<u>Year-to-Year Change</u>	
2017	31,133.2		
2018	32,968.7	2017-2018	5.9%
2019	31,772.5	2018-2019	-3.6%
2020	26,363.1	2019-2020	-17.0%
2021	26,384.0	2020-2021	0.1%
2022	26,344.0	2021-2022	-0.2%
2023	26,195.6	2022-2023	-0.6%
2028	21,711.1	CAGR 2023-2028	-17.1%

In 2022, sales for this product in Poland is forecast to be \$13.0 million dollars.

Sales are forecast to change by 4.3 percent in the next year (2022 to 2023). In 2022, sales will be 26.3 million Zlotys and will change by -0.2 percent in the next year (2022 to 2023).

In 2028, sales for this product in Poland is forecast to be \$15.1 million dollars.

The compound annual growth rate is projected to change by 2.2 percent from 2023 to 2028. In 2028, sales will be 26.3 million Zlotys and will change by -0.2 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Poland

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Dolnośląskie [Lower Silesia]	939.5	983.9	1,025.5	1,136.2
Kujawsko-Pomorskie	675.9	708.1	738.3	819.7
Łódzkie [Łódź]	802.9	839.2	872.9	957.7
Lubelskie [Lublin]	690.9	722.7	752.4	829.0
Lubuskie [Lubusz]	329.8	345.6	360.3	400.1
Małopolskie [Lesser Poland]	1,095.2	1,148.9	1,199.5	1,340.8
Mazowieckie [Mazovia]	1,735.3	1,820.6	1,901.0	2,125.9
Opolskie [Opole]	320.2	334.4	347.6	379.8
Podkarpackie [Subcarpathia]	689.3	722.4	753.4	837.7
Podlaskie [Podlachia]	384.2	402.1	418.8	462.6
Pomorskie [Pomerania]	751.0	788.4	823.8	924.2
Śląskie [Silesia]	1,472.5	1,539.6	1,602.2	1,761.5
Świętokrzyskie [Holy Cross]	405.7	424.3	441.6	486.1
Warmińsko-Mazurskie	466.3	488.5	509.4	565.4
Wielkopolskie [Greater Poland]	1,127.9	1,183.1	1,235.0	1,379.3
West Pomerania	554.1	580.4	605.2	671.7

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Puerto Rico

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	6,854.2	0.41%		
2018	6,557.8	0.37%	2017-2018	-4.3%
2019	6,428.9	0.38%	2018-2019	-2.0%
2020	5,689.3	0.37%	2019-2020	-11.5%
2021	6,377.5	0.36%	2020-2021	12.1%
2022	6,701.2	0.35%	2021-2022	5.1%
2023	7,012.3	0.34%	2022-2023	4.6%
2028	7,501.1	0.29%	CAGR 2023-2028	1.4%

<u>Dollars</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Dollars 000s)</u>	<u>Year-to-Year Change</u>	
2017	4,487.6		
2018	4,430.9	2017-2018	-1.3%
2019	4,138.4	2018-2019	-6.6%
2020	3,423.6	2019-2020	-17.3%
2021	3,370.1	2020-2021	-1.6%
2022	3,309.8	2021-2022	-1.8%
2023	3,237.2	2022-2023	-2.2%
2028	2,470.0	CAGR 2023-2028	-23.7%

In 2022, sales for this product in Puerto Rico is forecast to be \$6.7 million dollars. Sales are forecast to change by 4.6 percent in the next year (2022 to 2023). In 2022, sales will be 3.3 million Dollars and will change by -1.8 percent in the next year (2022 to 2023).

In 2028, sales for this product in Puerto Rico is forecast to be \$7.5 million dollars. The compound annual growth rate is projected to change by 1.4 percent from 2023 to 2028. In 2028, sales will be 3.3 million Dollars and will change by -1.8 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Puerto Rico

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Culebra	3.4	3.6	3.8	4.2
Puerto Rico	6,357.7	6,680.3	6,990.4	7,477.3
Vieques	16.4	17.3	18.1	19.6

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Romania

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	5,781.6	0.34%		
2018	6,197.2	0.35%	2017-2018	7.2%
2019	5,535.3	0.33%	2018-2019	-10.7%
2020	5,437.7	0.35%	2019-2020	-1.8%
2021	6,376.7	0.36%	2020-2021	17.3%
2022	7,009.5	0.37%	2021-2022	9.9%
2023	7,673.4	0.38%	2022-2023	9.5%
2028	10,284.7	0.40%	CAGR 2023-2028	6.8%

<u>New Leus</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(New Leus 000s)</u>	<u>Year-to-Year Change</u>	
2017	15,221.9		
2018	16,504.4	2017-2018	8.4%
2019	15,100.5	2018-2019	-8.5%
2020	13,429.3	2019-2020	-11.1%
2021	13,835.9	2020-2021	3.0%
2022	14,222.1	2021-2022	2.8%
2023	14,558.7	2022-2023	2.4%
2028	13,952.1	CAGR 2023-2028	-4.2%

In 2022, sales for this product in Romania is forecast to be \$7.0 million dollars.

Sales are forecast to change by 9.5 percent in the next year (2022 to 2023). In 2022, sales will be 14.2 million New Leus and will change by 2.8 percent in the next year (2022 to 2023).

In 2028, sales for this product in Romania is forecast to be \$10.3 million dollars.

The compound annual growth rate is projected to change by 6.8 percent from 2023 to 2028. In 2028, sales will be 14.2 million New Leus and will change by 2.8 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Romania

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Alba	106.1	116.2	126.8	167.0
Arad	136.6	150.2	164.4	220.0
Argeş	192.7	211.8	231.9	310.6
Bacău	191.9	210.3	229.4	302.3
Bihor	183.9	202.3	221.7	298.6
Botoşani	127.8	140.3	153.4	204.2
Braşov	176.4	193.9	212.1	283.6
Bucureşti [Bucharest]	598.1	658.3	721.6	973.2
Buzău	138.6	152.0	166.0	219.9
Cluj	228.9	252.7	277.8	379.7
Constanţa	220.7	243.1	266.6	360.4
Dâmboviţa	164.0	180.5	197.8	266.5
Dolj	206.5	226.6	247.6	328.6
Galaţi	166.1	181.9	198.4	260.9
Gorj	105.1	115.2	125.7	165.7
Hunedoara	124.6	135.9	147.7	190.3
Iaşi	258.5	285.3	313.7	429.4
Ilfov	156.2	176.1	197.9	301.5
Maramureş	151.3	166.2	182.0	243.6
Mureş	175.9	193.6	212.1	285.5
Neamţ	145.1	158.7	172.9	226.1
Olt	131.5	143.9	156.8	205.4
Prahova	237.7	261.0	285.3	379.3
Sălaj	69.5	76.1	83.1	109.7
Satu Mare	108.2	118.8	129.9	173.1
Sibiu	128.7	141.6	155.2	208.7
Suceava	204.8	225.4	247.0	332.5
Teleorman	111.3	121.4	131.9	170.0
Timiş	229.2	253.5	279.1	385.2
Tulcea	64.2	70.1	76.2	98.5
Vâlcea	115.2	126.2	137.8	182.1
Vaslui	124.1	136.1	148.6	196.7
Vrancea	106.5	116.8	127.6	169.1

Note: Sales for 2021-2022 are forecasts and sales †

Note: Sales for 2018-2019 are forecasts and sales for 2020-2025 projections

Russia

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

US Dollars	Market Sales	Pct. of Global		
Year	(USD 000s)	Market	Year-to-Year Change	
2017	26,347.0	1.56%		
2018	29,821.0	1.67%	2017-2018	13.2%
2019	28,425.2	1.70%	2018-2019	-4.7%
2020	25,634.7	1.66%	2019-2020	-9.8%
2021	29,310.5	1.66%	2020-2021	14.3%
2022	31,643.6	1.67%	2021-2022	8.0%
2023	34,000.8	1.67%	2022-2023	7.4%
2028	43,870.2	1.72%	CAGR 2023-2028	5.8%

Rubles	Market Sales		
Year	(Rubles 000s)	Year-to-Year Change	
2017	1,001,464.8		
2018	1,262,708.1	2017-2018	26.1%
2019	1,184,561.5	2018-2019	-6.2%
2020	1,005,138.4	2019-2020	-15.1%
2021	1,030,937.2	2020-2021	2.6%
2022	1,062,647.6	2021-2022	3.1%
2023	1,090,156.5	2022-2023	2.6%
2028	1,115,951.3	CAGR 2023-2028	2.4%

In 2022, sales for this product in Russia is forecast to be \$31.6 million dollars. Sales are forecast to change by 7.4 percent in the next year (2022 to 2023). In 2022, sales will be 1062.6 million Rubles and will change by 3.1 percent in the next year (2022 to 2023).

In 2028, sales for this product in Russia is forecast to be \$43.9 million dollars. The compound annual growth rate is projected to change by 5.8 percent from 2023 to 2028. In 2028, sales will be 1062.6 million Rubles and will change by 3.1 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Russia

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Central Russia	7,777.5	8,396.7	9,022.1	11,638.3
Dal'nevostočnyj Federal'nyj	1,248.0	1,340.4	1,432.8	1,800.7
[Southern Russia	2,903.3	3,140.7	3,381.4	4,405.8
Volga	6,026.4	6,492.5	6,961.5	8,886.3
Northern Caucasus	2,156.9	2,354.1	2,557.2	3,483.2
Northwestern Russia	2,708.7	2,915.3	3,122.8	3,966.7
Siberia	3,927.1	4,232.8	4,540.6	5,809.2
Ural'skij Federal'nyj Okrug [Ural]	2,562.4	2,771.1	2,982.5	3,880.0

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Saudi Arabia

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	12,161.0	0.72%		
2018	13,811.9	0.77%	2017-2018	13.6%
2019	12,893.6	0.77%	2018-2019	-6.6%
2020	12,814.0	0.83%	2019-2020	-0.6%
2021	15,414.9	0.88%	2020-2021	20.3%
2022	17,382.4	0.92%	2021-2022	12.8%
2023	19,520.1	0.96%	2022-2023	12.3%
2028	29,721.5	1.17%	CAGR 2023-2028	10.5%

<u>Rials</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Rials 000s)</u>	<u>Year-to-Year Change</u>	
2017	29,627.7		
2018	34,996.1	2017-2018	18.1%
2019	31,124.4	2018-2019	-11.1%
2020	29,300.1	2019-2020	-5.9%
2021	31,222.2	2020-2021	6.6%
2022	33,193.9	2021-2022	6.3%
2023	35,144.5	2022-2023	5.9%
2028	39,863.2	CAGR 2023-2028	13.4%

In 2022, sales for this product in Saudi Arabia is forecast to be \$17.4 million dollars. Sales are forecast to change by 12.3 percent in the next year (2022 to 2023). In 2022, sales will be 33.2 million Rials and will change by 6.3 percent in the next year (2022 to 2023).

In 2028, sales for this product in Saudi Arabia is forecast to be \$29.7 million dollars. The compound annual growth rate is projected to change by 10.5 percent from 2023 to 2028. In 2028, sales will be 33.2 million Rials and will change by 6.3 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Saudi Arabia

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Al-Bāḥah	215.7	240.4	266.8	383.2
Northern Frontier	173.3	194.2	216.6	319.3
Al-Jawf (incl. Al-Qurayyāt)	249.0	280.9	315.6	481.7
Medina	1,018.3	1,149.0	1,291.1	1,971.2
Al-Qaṣīm [Al-Qaseem]	688.6	776.5	872.0	1,327.4
Ar-Riyād [Riyadh]	3,964.7	4,489.7	5,063.2	7,872.5
Eastern Region	2,315.2	2,609.9	2,930.0	4,453.4
'Asīr [Aseer]	1,043.8	1,170.4	1,306.9	1,934.1
Ḥā'il	328.0	368.0	411.3	610.9
Jīzān	769.0	865.9	971.0	1,467.4
Mecca	3,910.2	4,403.8	4,939.1	7,471.7
Najrān	288.9	326.3	366.9	562.5
Tabūk [Tabouk]	450.1	507.5	569.7	866.2

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Singapore

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	8,837.5	0.52%		
2018	10,612.5	0.60%	2017-2018	20.1%
2019	9,444.0	0.56%	2018-2019	-11.0%
2020	9,644.5	0.62%	2019-2020	2.1%
2021	11,717.4	0.67%	2020-2021	21.5%
2022	13,344.2	0.70%	2021-2022	13.9%
2023	15,134.3	0.74%	2022-2023	13.4%
2028	24,211.5	0.95%	CAGR 2023-2028	12.0%

<u>Dollars</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Dollars 000s)</u>	<u>Year-to-Year Change</u>	
2017	7,848.3		
2018	9,671.6	2017-2018	23.2%
2019	8,293.4	2018-2019	-14.3%
2020	7,892.8	2019-2020	-4.8%
2021	8,428.9	2020-2021	6.8%
2022	8,980.7	2021-2022	6.5%
2023	9,529.2	2022-2023	6.1%
2028	10,926.9	CAGR 2023-2028	14.7%

In 2022, sales for this product in Singapore is forecast to be \$13.3 million dollars.

Sales are forecast to change by 13.4 percent in the next year (2022 to 2023). In 2022, sales will be 9 million Dollars and will change by 6.5 percent in the next year (2022 to 2023).

In 2028, sales for this product in Singapore is forecast to be \$24.2 million dollars.

The compound annual growth rate is projected to change by 12 percent from 2023 to 2028. In 2028, sales will be 9 million Dollars and will change by 6.5 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Singapore

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Central Region	1,811.3	2,020.1	2,242.9	3,212.3
East Region	1,348.1	1,504.6	1,671.8	2,403.4
North-East Region	1,841.3	2,102.9	2,391.0	3,856.0
North Region	1,132.6	1,284.7	1,450.7	2,261.1
West Region	1,845.7	2,078.2	2,329.6	3,499.9
Non-Resident Population	3,738.4	4,353.8	5,048.1	8,978.6

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

South Africa

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	5,751.6	0.34%		
2018	5,935.2	0.33%	2017-2018	3.2%
2019	5,368.2	0.32%	2018-2019	-9.6%
2020	4,832.8	0.31%	2019-2020	-10.0%
2021	5,385.1	0.31%	2020-2021	11.4%
2022	5,624.6	0.30%	2021-2022	4.4%
2023	5,850.6	0.29%	2022-2023	4.0%
2028	6,073.7	0.24%	CAGR 2023-2028	0.8%

<u>Rands</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Rands 000s)</u>	<u>Year-to-Year Change</u>	
2017	49,746.4		
2018	53,070.8	2017-2018	6.7%
2019	49,927.7	2018-2019	-5.9%
2020	41,701.4	2019-2020	-16.5%
2021	41,710.6	2020-2021	0.0%
2022	41,623.8	2021-2022	-0.2%
2023	41,365.8	2022-2023	-0.6%
2028	34,186.9	CAGR 2023-2028	-17.4%

In 2022, sales for this product in South Africa is forecast to be \$5.6 million dollars. Sales are forecast to change by 4 percent in the next year (2022 to 2023). In 2022, sales will be 41.6 million Rands and will change by -0.2 percent in the next year (2022 to 2023).

In 2028, sales for this product in South Africa is forecast to be \$6.1 million dollars. The compound annual growth rate is projected to change by 0.8 percent from 2023 to 2028. In 2028, sales will be 41.6 million Rands and will change by -0.2 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

South Africa

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Eastern Cape	596.0	614.0	629.8	609.1
Free State (Oranje Free State)	263.8	272.2	279.7	272.8
Gauteng	1,412.5	1,492.4	1,570.1	1,723.4
KwaZulu-Natal	1,043.4	1,084.4	1,122.3	1,134.7
Limpopo (Northern Transvaal)	533.5	553.5	571.9	573.6
Mpumalanga (Eastern Transvaal)	421.4	440.2	458.0	475.5
Northern Cape	111.8	115.9	119.7	119.9
North West	369.2	385.7	401.2	416.3
Western Cape	633.6	666.3	697.8	748.4

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Spain

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

US Dollars	Market Sales	Pct. of Global		
Year	(USD 000s)	Market	Year-to-Year Change	
2017	20,538.9	1.21%		
2018	21,863.3	1.23%	2017-2018	6.4%
2019	19,779.0	1.18%	2018-2019	-9.5%
2020	17,203.6	1.11%	2019-2020	-13.0%
2021	19,119.5	1.09%	2020-2021	11.1%
2022	20,021.8	1.06%	2021-2022	4.7%
2023	20,828.1	1.02%	2022-2023	4.0%
2028	19,246.6	0.76%	CAGR 2023-2028	-1.5%

Euros	Market Sales		
Year	(Euros 000s)	Year-to-Year Change	
2017	11,811.9		
2018	12,508.8	2017-2018	5.9%
2019	11,373.3	2018-2019	-9.1%
2020	9,304.7	2019-2020	-18.2%
2021	9,244.7	2020-2021	-0.6%
2022	9,145.1	2021-2022	-1.1%
2023	8,992.2	2022-2023	-1.7%
2028	5,933.1	CAGR 2023-2028	-34.0%

In 2022, sales for this product in Spain is forecast to be \$20.0 million dollars.

Sales are forecast to change by 4 percent in the next year (2022 to 2023). In 2022, sales will be 9.1 million Euros and will change by -1.1 percent in the next year (2022 to 2023).

In 2028, sales for this product in Spain is forecast to be \$19.2 million dollars.

The compound annual growth rate is projected to change by -1.5 percent from 2023 to 2028. In 2028, sales will be 9.1 million Euros and will change by -1.1 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Spain

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Andalucía [Andalusia]	3,425.5	3,586.1	3,729.4	3,439.8
Aragón	531.5	554.6	574.9	521.7
Asturias	409.1	424.2	436.9	384.1
Canarias [Canary Islands]	889.7	937.4	981.0	934.0
Cantabria	235.0	245.2	254.2	230.5
Castilla-La Mancha	844.9	885.4	921.8	854.7
Castilla y León	962.4	998.4	1,028.9	906.6
Cataluña [Catalonia]	3,106.4	3,257.5	3,393.3	3,156.1
Ceuta	34.7	36.4	37.9	35.3
Comunitat Valenciana	2,061.6	2,164.3	2,257.0	2,110.8
Extremadura	429.7	446.8	461.4	411.2
Galicia	1,075.9	1,117.7	1,153.3	1,023.3
Illes Balears [Balearic Islands]	481.5	509.6	535.7	521.4
La Rioja	129.8	135.9	141.3	130.3
Madrid	2,709.0	2,846.3	2,970.7	2,789.9
Melilla	36.0	38.0	39.9	38.4
Murcia	621.0	654.1	684.4	650.7
Navarra [Navarre]	264.9	277.7	289.1	268.2
País Vasco [Basque Country]	870.7	906.3	937.0	839.6

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Sweden

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	9,727.7	0.57%		
2018	9,923.3	0.56%	2017-2018	2.0%
2019	8,863.8	0.53%	2018-2019	-10.7%
2020	7,685.8	0.50%	2019-2020	-13.3%
2021	8,333.8	0.47%	2020-2021	8.4%
2022	8,470.6	0.45%	2021-2022	1.6%
2023	8,574.1	0.42%	2022-2023	1.2%
2028	7,767.6	0.30%	CAGR 2023-2028	-1.9%

<u>Kronas</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Kronas 000s)</u>	<u>Year-to-Year Change</u>	
2017	53,980.6		
2018	58,282.4	2017-2018	8.0%
2019	53,967.7	2018-2019	-7.4%
2020	43,758.7	2019-2020	-18.9%
2021	42,851.8	2020-2021	-2.1%
2022	41,867.1	2021-2022	-2.3%
2023	40,736.3	2022-2023	-2.7%
2028	30,286.2	CAGR 2023-2028	-25.7%

In 2022, sales for this product in Sweden is forecast to be \$8.5 million dollars.

Sales are forecast to change by 1.2 percent in the next year (2022 to 2023). In 2022, sales will be 41.9 million Kronas and will change by -2.3 percent in the next year (2022 to 2023).

In 2028, sales for this product in Sweden is forecast to be \$7.8 million dollars.

The compound annual growth rate is projected to change by -1.9 percent from 2023 to 2028. In 2028, sales will be 41.9 million Kronas and will change by -2.3 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Sweden

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Blekinge län	129.8	131.4	132.4	117.3
Dalarnas län	230.0	232.2	233.4	204.3
Gävleborgs län	229.5	231.6	232.8	203.6
Gotlands län	47.8	48.3	48.7	42.9
Hallands län	271.1	276.3	280.4	257.2
Jämtlands län	103.9	104.8	105.2	91.5
Jönköpings län	295.3	299.7	303.0	272.8
Kalmar län	195.9	197.9	199.1	174.8
Kronobergs län	159.9	162.2	163.7	146.4
Norrbottnens län	202.6	204.3	205.0	178.1
Örebro län	242.4	245.7	247.9	221.0
Östergötlands län	374.5	380.0	383.9	344.6
Skåne län	1,118.8	1,139.8	1,156.3	1,058.9
Södermanlands län	237.1	240.6	243.2	218.5
Stockholms län	1,937.3	1,981.2	2,017.7	1,884.2
Uppsala län	307.9	314.0	318.9	293.7
Värmlands län	226.3	228.4	229.6	201.0
Västerbottens län	219.7	222.4	224.2	198.9
Västernorrlands län	197.1	198.7	199.4	173.0
Västmanlands län	219.5	222.5	224.6	200.7
Västra Götalands län	1,387.3	1,408.7	1,424.6	1,284.2

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Switzerland

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	17,029.6	1.01%		
2018	17,591.3	0.99%	2017-2018	3.3%
2019	17,292.4	1.03%	2018-2019	-1.7%
2020	15,550.0	1.01%	2019-2020	-10.1%
2021	17,763.1	1.01%	2020-2021	14.2%
2022	19,020.4	1.00%	2021-2022	7.1%
2023	20,282.8	1.00%	2022-2023	6.6%
2028	23,844.1	0.94%	CAGR 2023-2028	3.5%

<u>Swiss Francs</u>	<u>Market Sales</u>		
<u>Year</u>	<u>Swiss Francs 000s)</u>	<u>Year-to-Year Change</u>	
2017	10,894.4		
2018	11,623.0	2017-2018	6.7%
2019	11,062.2	2018-2019	-4.8%
2020	9,421.6	2019-2020	-14.8%
2021	9,572.6	2020-2021	1.6%
2022	9,703.5	2021-2022	1.4%
2023	9,795.6	2022-2023	0.9%
2028	8,755.4	CAGR 2023-2028	-10.6%

In 2022, sales for this product in Switzerland is forecast to be \$19.0 million dollars. Sales are forecast to change by 6.6 percent in the next year (2022 to 2023). In 2022, sales will be 9.7 million Swiss Francs and will change by 1.4 percent in the next year (2022 to 2023).

In 2028, sales for this product in Switzerland is forecast to be \$23.8 million dollars. The compound annual growth rate is projected to change by 3.5 percent from 2023 to 2028. In 2028, sales will be 9.7 million Swiss Francs and will change by 1.4 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Switzerland

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Aargau [Argovia]	1,413.2	1,516.9	1,621.5	1,929.1
Appenzell Outer Rhodes	113.4	120.7	127.9	145.6
Appenzell Inner Rhodes	34.0	36.4	38.7	45.0
Basel-Landschaft	600.0	640.9	681.6	790.9
Basel-Stadt [Basel-City]	387.8	411.4	434.7	487.9
Bern	2,120.7	2,259.9	2,398.3	2,751.8
Fribourg	671.5	723.7	776.6	942.4
Genève [Geneva]	1,048.5	1,124.9	1,201.9	1,426.6
Glarus	82.4	87.7	92.9	105.7
Graubünden [Grisons]	417.1	445.1	473.1	547.0
Jura	151.7	161.8	171.8	197.6
Luzern	853.4	913.9	974.6	1,146.1
Neuchâtel	368.8	392.9	416.9	477.9
Nidwalden [Nidwald]	92.5	99.3	106.1	125.9
Obwalden [Obwald]	80.5	86.3	92.2	109.3
Schaffhausen	167.4	178.6	189.8	219.0
Schwyz	340.9	366.8	393.1	473.2
Solothurn	565.2	603.8	642.4	746.5
St. Gallen	1,057.4	1,130.1	1,202.9	1,400.7
Thurgau [Thurgovia]	575.0	616.7	658.8	781.1
Ticino	749.7	803.2	856.9	1,009.4
Uri	75.2	80.0	84.8	96.9
Valais	726.3	780.7	835.8	1,001.4
Vaud	1,657.2	1,778.4	1,900.7	2,259.1
Zug	270.3	291.2	312.4	378.4
Zürich [Zurich]	3,143.0	3,369.1	3,596.5	4,249.6

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Thailand

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

US Dollars	Market Sales	Pct. of Global		
Year	(USD 000s)	Market	Year-to-Year Change	
2017	17,077.2	1.01%		
2018	18,566.2	1.04%	2017-2018	8.7%
2019	18,086.2	1.08%	2018-2019	-2.6%
2020	17,239.1	1.11%	2019-2020	-4.7%
2021	20,379.9	1.16%	2020-2021	18.2%
2022	22,748.8	1.20%	2021-2022	11.6%
2023	25,272.9	1.24%	2022-2023	11.1%
2028	38,530.2	1.51%	CAGR 2023-2028	10.5%

Bahts	Market Sales		
Year	(Bahts 000s)	Year-to-Year Change	
2017	375,710.5		
2018	405,318.7	2017-2018	7.9%
2019	361,470.2	2018-2019	-10.8%
2020	322,473.4	2019-2020	-10.8%
2021	330,339.7	2020-2021	2.4%
2022	337,618.3	2021-2022	2.2%
2023	343,634.2	2022-2023	1.8%
2028	320,012.2	CAGR 2023-2028	-6.9%

In 2022, sales for this product in Thailand is forecast to be \$22.7 million dollars. Sales are forecast to change by 11.1 percent in the next year (2022 to 2023). In 2022, sales will be 337.6 million Bahts and will change by 2.2 percent in the next year (2022 to 2023).

In 2028, sales for this product in Thailand is forecast to be \$38.5 million dollars. The compound annual growth rate is projected to change by 10.5 percent from 2023 to 2028. In 2028, sales will be 337.6 million Bahts and will change by 2.2 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Thailand

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Bangkok Metropolitan	5,045.7	5,716.0	6,444.0	10,554.2
Central	924.2	1,026.5	1,134.7	1,684.3
Eastern	1,760.0	1,984.3	2,226.4	3,560.5
Northeastern (Isan)	5,411.7	5,972.1	6,558.8	9,424.2
Northern	3,379.9	3,746.6	4,133.1	6,072.8
Southern	2,795.1	3,122.4	3,471.1	5,300.6
Western	1,063.5	1,180.8	1,304.9	1,933.6

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Turkey

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	20,547.0	1.21%		
2018	20,141.4	1.13%	2017-2018	-2.0%
2019	18,046.5	1.08%	2018-2019	-10.4%
2020	16,134.1	1.04%	2019-2020	-10.6%
2021	17,363.5	0.99%	2020-2021	7.6%
2022	17,646.6	0.93%	2021-2022	1.6%
2023	17,853.2	0.88%	2022-2023	1.2%
2028	14,622.1	0.57%	CAGR 2023-2028	-3.6%

<u>Liras</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Liras 000s)</u>	<u>Year-to-Year Change</u>	
2017	48,698.1		
2018	65,709.2	2017-2018	34.9%
2019	65,912.0	2018-2019	0.3%
2020	61,270.1	2019-2020	-7.0%
2021	65,692.1	2020-2021	7.2%
2022	70,393.9	2021-2022	7.2%
2023	74,585.0	2022-2023	6.0%
2028	81,802.3	CAGR 2023-2028	9.7%

In 2022, sales for this product in Turkey is forecast to be \$17.6 million dollars. Sales are forecast to change by 1.2 percent in the next year (2022 to 2023). In 2022, sales will be 70.4 million Liras and will change by 7.2 percent in the next year (2022 to 2023).

In 2028, sales for this product in Turkey is forecast to be \$14.6 million dollars. The compound annual growth rate is projected to change by -3.6 percent from 2023 to 2028. In 2028, sales will be 70.4 million Liras and will change by 7.2 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Turkey

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Adana	477.2	484.1	488.9	395.8
Ankara	1,178.0	1,202.1	1,221.0	1,018.2
Antalya	532.3	546.9	559.4	482.7
Aydın	225.4	227.8	229.1	181.9
Balıkesir	252.1	254.3	255.4	201.2
Bursa	651.9	667.4	680.1	576.5
Denizli	213.4	216.0	217.6	174.2
Diyarbakır	367.1	373.3	378.0	310.1
Erzurum	155.0	154.3	152.9	112.8
Eskişehir	177.7	179.8	181.0	144.6
Gaziantep	442.0	454.0	464.2	400.0
Hatay	334.6	339.5	342.8	277.5
İstanbul	3,436.0	3,536.2	3,622.4	3,151.7
İzmir	931.3	948.3	961.1	792.8
Kahramanmaraş	234.0	236.1	237.2	187.2
Kayseri	289.9	294.4	297.5	241.9
Kocaeli	413.8	425.3	435.1	376.3
Konya	455.4	458.8	460.1	359.8
Malatya	162.3	162.8	162.6	124.6
Manisa	292.9	295.4	296.5	233.0
Mardin	174.6	177.0	178.7	144.6
Mersin (İçel)	383.9	388.8	391.9	314.5
Muğla	203.1	207.1	210.2	174.7
Sakarya	206.4	209.5	211.7	171.8
Samsun	267.9	269.4	269.6	208.7
Şanlıurfa	439.7	450.9	460.3	393.7
Tekirdağ	219.6	226.0	231.6	201.7
Trabzon	159.6	159.3	158.2	118.0
Van	251.3	256.8	261.2	219.3

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Note: Sales for 2018-2019 are forecasts and sales for 2020-2025 projections

United Arab Emirates

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	4,791.8	0.28%		
2018	5,055.2	0.28%	2017-2018	5.5%
2019	4,762.2	0.28%	2018-2019	-5.8%
2020	4,545.5	0.29%	2019-2020	-4.6%
2021	5,307.7	0.30%	2020-2021	16.8%
2022	5,809.5	0.31%	2021-2022	9.5%
2023	6,332.7	0.31%	2022-2023	9.0%
2028	8,308.5	0.33%	CAGR 2023-2028	6.2%

<u>Dirhams</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Dirhams 000s)</u>	<u>Year-to-Year Change</u>	
2017	11,198.5		
2018	12,543.9	2017-2018	12.0%
2019	11,258.1	2018-2019	-10.3%
2020	10,270.0	2019-2020	-8.8%
2021	10,702.0	2020-2021	4.2%
2022	11,126.4	2021-2022	4.0%
2023	11,519.9	2022-2023	3.5%
2028	11,685.4	CAGR 2023-2028	1.4%

In 2022, sales for this product in United Arab Emirates is forecast to be \$5.8 million dollars. Sales are forecast to change by 9 percent in the next year (2022 to 2023). In 2022, sales will be 11.1 million Dirhams and will change by 4 percent in the next year (2022 to 2023).

In 2028, sales for this product in United Arab Emirates is forecast to be \$8.3 million dollars. The compound annual growth rate is projected to change by 6.2 percent from 2023 to 2028. In 2028, sales will be 11.1 million Dirhams and will change by 4 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

United Arab Emirates

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Abū Ḥaby [Abu Dhabi]	1,646.6	1,785.9	1,928.8	2,414.4
'Ajmān	279.2	307.2	336.6	452.5
Al-Fujayrah [Fujairah]	149.3	162.6	176.4	225.6
Ash-Shāriqah [Sharjah]	1,062.4	1,168.5	1,279.8	1,718.3
Dubayy [Dubai]	1,861.1	2,050.8	2,250.3	3,049.9
Rā's al-Khaymah	253.3	274.2	295.6	366.9
Umm al-Qaywayn	55.8	60.4	65.1	81.0

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

United Kingdom

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	32,799.6	1.94%		
2018	34,666.3	1.94%	2017-2018	5.7%
2019	31,865.3	1.90%	2018-2019	-8.1%
2020	28,392.5	1.84%	2019-2020	-10.9%
2021	30,900.2	1.75%	2020-2021	8.8%
2022	31,758.0	1.68%	2021-2022	2.8%
2023	32,491.8	1.60%	2022-2023	2.3%
2028	28,145.0	1.10%	CAGR 2023-2028	-2.7%

<u>Pounds</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Pounds 000s)</u>	<u>Year-to-Year Change</u>	
2017	16,557.3		
2018	17,557.4	2017-2018	6.0%
2019	16,070.3	2018-2019	-8.5%
2020	13,282.6	2019-2020	-17.3%
2021	13,077.2	2020-2021	-1.5%
2022	12,845.2	2021-2022	-1.8%
2023	12,565.4	2022-2023	-2.2%
2028	9,595.4	CAGR 2023-2028	-23.6%

In 2022, sales for this product in United Kingdom is forecast to be \$31.8 million dollars. Sales are forecast to change by 2.3 percent in the next year (2022 to 2023). In 2022, sales will be 12.8 million Pounds and will change by -1.8 percent in the next year (2022 to 2023).

In 2028, sales for this product in United Kingdom is forecast to be \$28.1 million dollars. The compound annual growth rate is projected to change by -2.7 percent from 2023 to 2028. In 2028, sales will be 12.8 million Pounds and will change by -1.8 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

United Kingdom

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
England	26,034.3	26,767.2	27,396.1	23,775.5
Northern Ireland	886.2	911.3	932.9	810.6
Scotland	2,519.0	2,581.5	2,633.5	2,248.6
Wales (Cymru)	1,460.7	1,498.0	1,529.3	1,310.3

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

United States

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

US Dollars	Market Sales	Pct. of Global		
Year	(USD 000s)	Market	Year-to-Year Change	
2017	297,720.4	17.60%		
2018	313,906.0	17.61%	2017-2018	5.4%
2019	303,653.2	18.12%	2018-2019	-3.3%
2020	277,649.1	17.96%	2019-2020	-8.6%
2021	320,519.0	18.20%	2020-2021	15.4%
2022	346,836.4	18.29%	2021-2022	8.2%
2023	373,766.8	18.38%	2022-2023	7.8%
2028	463,126.1	18.17%	CAGR 2023-2028	4.8%

Dollars	Market Sales		
Year	(Dollars 000s)	Year-to-Year Change	
2017	2,561,442.2		
2018	2,771,498.4	2017-2018	8.2%
2019	2,732,660.0	2018-2019	-1.4%
2020	2,435,585.3	2019-2020	-10.9%
2021	2,565,984.5	2020-2021	5.4%
2022	2,697,137.5	2021-2022	5.1%
2023	2,823,301.8	2022-2023	4.7%
2028	3,025,148.9	CAGR 2023-2028	7.1%

In 2022, sales for this product in United States is forecast to be \$346.8 million dollars. Sales are forecast to change by 7.8 percent in the next year (2022 to 2023). In 2022, sales will be 2697.1 million Dollars and will change by 5.1 percent in the next year (2022 to 2023).

In 2028, sales for this product in United States is forecast to be \$463.1 million dollars. The compound annual growth rate is projected to change by 4.8 percent from 2023 to 2028. In 2028, sales will be 2697.1 million Dollars and will change by 5.1 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

United States

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Alabama	4,764.0	5,136.5	5,515.0	6,704.5
Arizona	7,421.2	8,138.8	8,888.7	11,766.1
Arkansas	2,964.5	3,203.0	3,446.1	4,233.3
California	38,777.9	41,951.5	45,195.7	55,882.4
Colorado	5,715.8	6,239.0	6,781.7	8,767.6
Connecticut	3,444.2	3,700.1	3,958.5	4,726.3
Florida	21,071.5	22,963.7	24,921.5	31,964.2
Georgia	10,656.6	11,612.8	12,602.0	16,158.2
Illinois	12,439.8	13,373.9	14,318.3	17,158.9
Indiana	6,484.3	6,989.7	7,503.1	9,111.3
Iowa	3,006.7	3,233.6	3,463.2	4,157.4
Kentucky	4,340.1	4,679.6	5,024.6	6,109.1
Louisiana	4,459.8	4,791.7	5,126.9	6,125.1
Maryland	5,898.8	6,370.7	6,851.7	8,400.0
Massachusetts	6,521.6	7,014.3	7,512.7	9,022.0
Michigan	9,536.8	10,233.2	10,934.7	12,978.1
Minnesota	5,442.5	5,878.6	6,323.1	7,756.5
Mississippi	2,913.6	3,136.4	3,362.1	4,054.6
Missouri	5,957.0	6,420.3	6,890.8	8,361.2
Nevada	3,376.7	3,739.8	4,124.8	5,735.5
New Jersey	8,713.7	9,380.9	10,057.0	12,134.9
New York	18,945.5	20,353.5	21,775.0	26,000.3
North Carolina	10,377.3	11,293.8	12,240.1	15,593.0
Ohio	11,132.2	11,948.8	12,771.8	15,181.8
Oklahoma	3,818.8	4,122.4	4,431.6	5,420.5
Oregon	4,123.5	4,475.6	4,837.6	6,080.5
Pennsylvania	12,234.2	13,135.4	14,044.1	16,717.9
South Carolina	4,959.0	5,381.9	5,816.6	7,307.0
Tennessee	6,657.7	7,212.5	7,781.0	9,687.4
Texas	28,446.1	31,036.0	33,720.6	43,498.3
Utah	3,185.6	3,485.9	3,798.5	4,972.0
Virginia	8,370.8	9,067.8	9,781.9	12,174.4
Washington	7,375.6	8,018.2	8,680.6	10,998.4
Wisconsin	5,643.5	6,080.2	6,523.3	7,900.3

Note: Sales for 2021-2022 are forecasts and sales †

Note: Sales for 2018-2019 are forecasts and sales for 2020-2025 projections

Venezuela

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

<u>US Dollars</u>	<u>Market Sales</u>	<u>Pct. of Global</u>		
<u>Year</u>	<u>(USD 000s)</u>	<u>Market</u>	<u>Year-to-Year Change</u>	
2017	7,317.1	0.43%		
2018	6,956.6	0.39%	2017-2018	-4.9%
2019	6,250.6	0.37%	2018-2019	-10.1%
2020	5,276.2	0.34%	2019-2020	-15.6%
2021	5,193.6	0.29%	2020-2021	-1.6%
2022	5,054.2	0.27%	2021-2022	-2.7%
2023	4,895.3	0.24%	2022-2023	-3.1%
2028	3,759.0	0.15%	CAGR 2023-2028	-4.6%

<u>Bolivars</u>	<u>Market Sales</u>		
<u>Year</u>	<u>(Bolivars 000s)</u>	<u>Year-to-Year Change</u>	
2017	35,116.8		
2018	37,646.0	2017-2018	7.2%
2019	34,939.9	2018-2019	-7.2%
2020	30,165.9	2019-2020	-13.7%
2021	30,675.7	2020-2021	1.7%
2022	31,122.3	2021-2022	1.5%
2023	31,445.1	2022-2023	1.0%
2028	28,228.1	CAGR 2023-2028	-10.2%

In 2022, sales for this product in Venezuela is forecast to be \$5.1 million dollars. Sales are forecast to change by -3.1 percent in the next year (2022 to 2023). In 2022, sales will be 31.1 million Bolivars and will change by 1.5 percent in the next year (2022 to 2023).

In 2028, sales for this product in Venezuela is forecast to be \$3.8 million dollars. The compound annual growth rate is projected to change by -4.6 percent from 2023 to 2028. In 2028, sales will be 31.1 million Bolivars and will change by 1.5 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Venezuela

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
Amazonas	32.9	32.9	32.8	28.8
Anzoátegui	290.4	283.8	276.0	216.3
Apure	96.0	93.9	91.4	72.0
Aragua	303.9	294.9	284.8	215.4
Barinas	161.1	158.0	154.2	123.2
Bolívar	292.6	285.8	277.8	217.2
Carabobo	419.8	408.2	394.9	301.7
Cojedes	62.0	60.7	59.0	46.4
Delta Amacuro	33.5	33.0	32.4	26.5
Dependencias Federales	0.4	0.4	0.4	0.3
Distrito Capital	322.6	309.0	294.6	208.9
Falcón	172.2	167.5	162.2	124.2
Guárico	147.5	143.7	139.4	107.8
Lara	333.0	323.5	312.7	237.6
Mérida	162.2	157.7	152.7	116.9
Miranda	518.8	504.2	487.7	371.7
Monagas	177.1	173.6	169.4	134.8
Nueva Esparta	100.2	98.4	96.1	77.1
Portuguesa	168.2	163.7	158.6	121.9
Sucre	167.6	162.3	156.4	117.2
Táchira	209.2	202.8	195.6	147.1
Trujillo	133.7	129.8	125.5	95.3
Vargas	60.0	57.8	55.4	40.6
Yaracuy	117.8	114.9	111.5	86.3
Zulia	711.0	693.8	673.7	524.0

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Vietnam

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Country

US Dollars	Market Sales	Pct. of Global		
Year	(USD 000s)	Market	Year-to-Year Change	
2017	4,699.9	0.28%		
2018	5,377.6	0.30%	2017-2018	14.4%
2019	5,597.9	0.33%	2018-2019	4.1%
2020	5,384.9	0.35%	2019-2020	-3.8%
2021	6,568.5	0.37%	2020-2021	22.0%
2022	7,565.2	0.40%	2021-2022	15.2%
2023	8,672.0	0.43%	2022-2023	14.6%
2028	15,461.7	0.61%	CAGR 2023-2028	15.7%

Dongs	Market Sales		
Year	(Dongs Mill.)	Year-to-Year Change	
2017	68,306.0		
2018	82,123.6	2017-2018	20.2%
2019	83,060.4	2018-2019	1.1%
2020	74,236.2	2019-2020	-10.6%
2021	79,838.7	2020-2021	7.5%
2022	86,290.3	2021-2022	8.1%
2023	92,822.5	2022-2023	7.6%
2028	120,439.1	CAGR 2023-2028	29.8%

In 2022, sales for this product in Vietnam is forecast to be \$7.6 million dollars.

Sales are forecast to change by 14.6 percent in the next year (2022 to 2023). In 2022, sales will be 86.3 million Dongs and will change by 8.1 percent in the next year (2022 to 2023).

In 2028, sales for this product in Vietnam is forecast to be \$15.5 million dollars.

The compound annual growth rate is projected to change by 15.7 percent from 2023 to 2028. In 2028, sales will be 86.3 million Dongs and will change by 8.1 percent from 2023 to 2028.

Source: Perry/Hope Partners

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Vietnam

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Market Sales by Regions (USD 000s)

	2021	2022	2023	2028
An Giang	151.8	173.7	197.9	341.3
Bắc Giang	115.5	132.4	151.1	262.8
Bến Tre	87.5	99.8	113.2	191.9
Bình Định	106.2	121.5	138.3	237.6
Bình Dương	154.5	183.9	217.8	456.6
Cần Thơ	88.6	101.6	116.1	203.2
Đắk Lắk	135.4	156.5	180.0	326.4
Đồng Nai	210.5	244.1	281.7	519.1
Đồng Tháp	118.9	136.2	155.2	268.8
Gia Lai	103.0	119.4	137.8	254.0
Hải Dương	124.5	142.6	162.5	281.2
Hải Phòng	139.1	159.8	182.8	322.2
Hà Nội (incl. Hà Tây) [Hanoi]	525.6	609.1	702.4	1,289.1
Hà Tĩnh	87.3	99.6	113.2	192.6
Kiên Giang	126.2	145.1	166.0	293.1
Lâm Đồng	91.8	105.9	121.6	218.1
Long An	105.3	120.9	138.1	241.9
Nam Định	127.8	145.8	165.5	280.8
Nghệ An	215.2	246.4	280.9	486.2
Phú Thọ	96.6	110.7	126.2	219.0
Quảng Nam	103.6	118.7	135.2	234.0
Quảng Ngãi	87.6	100.2	114.1	196.5
Sóc Trăng	93.1	106.8	121.9	212.9
Thái Bình	124.6	142.3	161.7	275.8
Thái Nguyên	86.4	99.3	113.5	199.9
Thanh Hóa	243.5	278.2	316.3	540.4
Ho Chi Minh City	608.1	708.4	821.4	1,548.9
Tiền Giang	121.8	139.5	159.0	275.4

Note: Sales for 2021-2022 are forecasts and sales for 2023-2028 projections

Note: Sales for 2018-2019 are forecasts and sales for 2020-2025 projections

Appendix

Product - Construction sands such as clayey sands; kaolinic sands; feldspathic sands

Overview

PRODCOM statistics aim at providing a full picture at EU level of developments in industrial production for a given product or for an industry in a comparable manner across countries. This aim became more important together with the establishment of the single market in 1992, and with rapid changes occurring in Europe the statistical system had to adapt to these changes.

The acronym PRODCOM comes from the French “PRODUCTION COMMUNAUTAIRE” (Community Production). The PRODCOM list is updated each year by the PRODCOM Expert Group. The headings of the PRODCOM list are linked to those from the Combined Nomenclature (CN) used to compile International Trade in Goods statistics, which thus enables direct comparisons between industrial production statistics and trade statistics (see below). PRODCOM headings are coded using an eight-digit numerical code, the first six digits of which are identical to those of the Statistical Classification of Products by Activity (CPA) code. The PRODCOM list is therefore also fully consistent with the CPA, while further detailing the CPA product categories.

PRODCOM statistics are broken down to a detail level of almost 3900 products available in the PRODCOM list. The main indicators of the production sold during the calendar year are collected and published both in monetary (EUR) and physical (kg, m², number of items, etc.) terms.

Eurostat releases in its database PRODCOM statistics for the EU as a whole as well as by Member State. The EU total excludes currently three EU Member States which are exempt from transmitting industrial production data given their small share in the EU total; these are Cyprus, Malta and Luxembourg.

How are PRODCOM statistics measured?

As mentioned above, PRODCOM statistics are based upon data on manufacturing of goods produced by the enterprises on the national territory. These enterprises carry out one or more activities at one or more locations and may comprise one or more legal units. When an enterprise is active in more than one economic activity, then the value added and turnover that it generates, the persons it employs, and the values of all other statistical variables will be classified under the enterprise’s principal activity. The principal activity is normally the one that generates the largest amount of value added. For PRODCOM statistics, the survey population consists of enterprises whose principal activity or one of its secondary activities was manufacturing of goods during the reference period.

PRODCOM statistics are compiled from the enterprises that cover at least 90 % of the national production per NACE class and employ at least 20 people (different thresholds may nonetheless be adopted by countries in exceptional cases). The territory covered in each country refers to the specifications of the Nomenclature of Countries and Territories for the External Trade Statistics of the Community and Statistics of Trade between Member States.

Indicator definitions for key PRODCOM statistics

PRODCOM statistics consist of the following set of indicators:

the physical volume of production sold during the survey period,
the value of production sold during the survey period,

the physical volume of actual production during the survey period, including any production which is incorporated into the manufacture of other products from the same undertaking.

The national statistical institutes transmit this set of indicators to Eurostat on an annual basis, six months after the end of the reference year. Data are available in both NACE Rev. 1.1 and NACE Rev. 2 classifications until 2008 reference year and from reference year 2009 onwards only in NACE Rev.2.

Appendix

Which parts of the economy does PRODCOM cover?

The PRODCOM statistics cover the industrial production (with the exception of military products and some energy products) carried out by enterprises classified within the Sections B to C of NACE Rev. 2, which include:

- Section B - Mining and quarrying
 - Division 07 - Mining of metal ores
 - Division 08 - Other mining and quarrying
 - Division 09 - Mining support service activities
- Section C - Manufacture
 - Division 10 - Manufacture of food products
 - Division 11 - Manufacture of beverages
 - Division 12 - Manufacture of tobacco products
 - Division 13 - Manufacture of textiles
 - Division 14 - Manufacture of wearing apparel
 - Division 15 - Manufacture of leather and related products
 - Division 16 - Manufacture of wood and of products of wood and cork, except furniture
 - Division 17 - Manufacture of paper and paper products
 - Division 18 - Printing and reproduction of recorded media
 - Division 19 - Manufacture of coke and refined petroleum products
 - Division 20 - Manufacture of chemicals and chemical products
 - Division 21 - Manufacture of basic pharmaceutical products and pharmaceutical preparations
 - Division 22 - Manufacture of rubber and plastic products
 - Division 23 - Manufacture of other non-metallic mineral products
 - Division 24 - Manufacture of basic metals
 - Division 25 - Manufacture of fabricated metal products, except machinery and equipment
 - Division 26 - Manufacture of computer, electronic and optical products
 - Division 27 - Manufacture of electrical equipment
 - Division 28 - Manufacture of machinery and equipment n.e.c.
 - Division 29 - Manufacture of motor vehicles, trailers and semi-trailers
 - Division 30 - Manufacture of other transport equipment
 - Division 31 - Manufacture of furniture
 - Division 32 - Other manufacturing
 - Division 33 - Repair and installation of machinery and equipment

Legislation

PRODCOM statistics are compiled under the legal basis provided by Council Regulation (EEC) NO 3924/1991 of 19 December 1991 and by Commission Regulation (EC) No 0912/2004 of 29 April 2004 implementing the Council Regulation (EEC) No 3924/91 on the establishment of a Community survey of industrial production. Additionally, a Commission Regulation updating the PRODCOM classification is available annually since 2003.

Methodology

A summary of the methodology applied for PRODCOM statistics accompanies the data on Eurostat's website as a European Statistics Metadata System (ESMS) metadata file (prodcom_esms). The national European Statistics Metadata System (ESMS) metadata files, employed by countries for PRODCOM statistics are available under the ESMS metadata file (prodcom_esms).

Classifications

Appendix

As mentioned above, the enterprises which are surveyed for PRODCOM statistics are classified according to their activity and assigned to a particular NACE code. The revised NACE Rev. 2 classification was adopted at the end of 2006, and is applicable to the PRODCOM Statistics since 2008 reference year. These changes in the classifications allowed a broader and more detailed collection of information to be compiled on industry, and provided the possibility to better identify new products from new areas of economic activity (such as technology-producing sectors).

Existing PRODCOM statistics presented in terms of NACE Rev. 1.1 will be maintained in the database for those users wishing to analyse historical series.

Before industrial production data collection could start, it was necessary to draw up a common list of products to be covered. Drawing up the PRODCOM list was a unique opportunity for Eurostat, the National Statistical Institutes and the European Trade Associations to work together to produce a classification that would work on the micro, national and European levels. The two main objectives of this work were to enable measuring the industrial production and to allow linking production statistics to trade statistics. As PRODCOM statistics have to be comparable with trade statistics, which are based on the CN, there had to be a close relationship between the two nomenclatures. Furthermore, the basic building blocks for PRODCOM are NACE (Rev. 2, as from 2008) and the CPA. Therefore, the PRODCOM list had to be developed in close association with these nomenclatures.

To understand how the different nomenclatures fit together, and their links to world-wide nomenclatures, it is useful to consider the diagram below which gives an overview of the revised system of integrated statistical classifications. This diagram shows the clear links between the PRODCOM list and the CN, which then links up to the HS at a world-wide level.

Diagram links: PRODCOM list, CN and HS

Policy context

Industrial production statistics collected within PRODCOM are used as one of the data sources in a number of policy areas covered mainly by the work of the Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs (GROW). The European Commission's enterprise policies aim to create a favourable environment for business to thrive within the EU, creating higher productivity, economic growth, jobs and wealth. Many of the policies that have been introduced in recent years have been aimed at reducing administrative burdens, stimulating innovation, encouraging sustainable production, and ensuring the smooth functioning of the EU's internal market.

At the European Council meeting of 26 March 2010, EU leaders set out their plan for Europe 2020, a strategy to enhance the competitiveness of the EU and to create more growth and jobs. The latest revision of the integrated economic and employment guidelines (revised as part of the Europe 2020 strategy for smart, sustainable and inclusive growth) includes a guideline to improve the business and consumer environment and modernise Europe's industrial base. Additional information about the Europe 2020 strategy can be found on the Europe 2020 website.

In October 2010, the European Commission presented a Communication on "An industrial policy for the globalisation era", establishing a strategic agenda and proposing broad cross-sectoral measures, as well as tailor-made actions for specific industries, mainly targeting so-called "green innovation" performance of various sectors. Prodcum statistics represent an important data input in order to take informed political decisions in these areas.

The central principles governing the internal market for services guarantee EU enterprises the freedom to establish themselves in other Member States, and the freedom to provide services on the territory of another EU Member State other than the one in which they are established. These central principles governing the internal market were set out in the EC Treaty. The objective of the Directive 0123/2006 of 12 December 2006 is to eliminate obstacles to trade in services, thus allowing the development of cross-border operations. It is intended to improve competitiveness, not just of service enterprises but also of European industry as a whole. In December 2006, the Directive was adopted by the European Parliament and the Council with transposition by the Member States required by the end of 2009. A comprehensive and structured listing of the legislative acts in force relating to industrial policy is available on Eurlex's website.