India's International Trade of Four Specific Commodities in the Recent Past

Some Insights

Preface

The study uses trade indicators to analyse merchandise export and import data in a way that should be useful for the purpose of policy. The indicators provide a glimpse of the trade patterns of the world and the performance of India in comparison to various other countries. They have been used in the case of India's exports of **Wheat or Meslin & Mens or Boys Shirts** and imports of **Silicon in Primary Form and Insulating Fittings for Electrical Machines** to indicate the possible directions policy may take.

The data used in this study has been sourced from the Export Import Data Bank of the DGCI&S, Department of Commerce, and Government of India and from the United Nations Comtrade Database. Introduction notes of each commodities has been sourced from the various sights –viz Wikipedia, Britannica, The Economic Times etc.

Computations are based on data at ITC-HS four-digit level (ITC-HS Code-1001 & 6205 for export and 3910 & 8547 for import) and the latest finalized data available on the UN Comtrade Database up to year 2022 and on the DGCI&S Database up to June'2023. So, trends from 2019 to 2022 have been shown when we extract the data from UN Comtrade and from 2019 to 2022 have been shown when we extract the data from DGCIS Data base.

In this report, we will see various analysis and aspects of India's Precious as well as International export trade of Wheat or Meslin & Mens or Boys Shirts and imports of Silicon in Primary Form and Insulating Fittings for Electrical Machines**.** We will use both the 4 digit Commodity codes.

Trends in India's as well as International Trade i.e. Exports and Imports of above four Commodities are given below in different tables :

- Table 1 : India's top 10 Export destination of Wheat or Meslin with their shares in percentage.
- Table 2 : World's top 10 Exporters of Wheat or Meslin with their shares in percentage.
- Table 3 : World's top 10 Importers of Wheat or Meslin with their shares in percentage.
- Annex- I : Top 3 sources of Wheat or Meslin of World's top 3 Importers.
- Table 4 : India's top 10 destination of Mens or Boys Shirts with their shares in percentage.
- Table 5 : World's top 10 Exporters of Mens or Boys Shirts with their shares in percentage.
- Table 6 : World's top 10 Importers of Mens or Boys Shirts with their shares in percentage.
- Annex-II : Top 3 sources of Mens or Boys Shirts of World's top 3 Importers.
- Table 7 : India's top10 Sources of Silicon in Primary Form with their shares in percentage.
- Table 8 : World's top 10 Importers of Silicon in Primary Form with their shares in percentage.
- Table 9 : India's top 10 Sources of Insulating Fittings for Electrical Machines with their shares in percentage.
- Table 10 : World's top 10 Importers of Insulating Fittings for Electrical Machines with their shares in percentage.

EXPORT

Wheat & Meslin

Wheat is a grass widely cultivated for its seed, a cereal grain that is a worldwide staple food. The many species of wheat together make up the genus ***Triticum*** the most widely grown is common wheat. The archaeological record suggests that wheat was first cultivated in the regions of the Fertile Crescent around 9600 BCE. Botanically, the wheat kernel is a type of fruit called a caryopsis.

Wheat is grown on more land area than any other food crop (220.4 million hectares or 545 million acres, 2014). World trade in wheat is greater than for all other crops combined.

In 2020, world production of wheat was 761 million tonnes (839 million short tons; 1.7 trillion pounds), making it the second most-produced cereal after maize. Since 1960, world production of wheat and other grain crops has tripled and is expected to grow further through the middle of the 21st century. Global demand for wheat is increasing due to the unique viscoelastic and adhesive properties of gluten proteins, which facilitate the production of processed foods, whose consumption is increasing as a result of the worldwide industrialization process and the westernization of the diet.

Wheat is an important source of carbohydrates. Globally, it is the leading source of vegetable proteins in human food, having a protein content of about 13%, which is relatively high compared to other major cereals but relatively low in protein quality (supplying essential amino acids). When eaten as the whole grain, wheat is a source of multiple nutrients and dietary fiber.

In a small part of the general population, gluten – comprising most of wheat protein – can trigger coeliac disease, noncoeliac gluten sensitivity, gluten ataxia, and dermatitis herpetiformis.

Cultivation and repeated harvesting and sowing of the grains of wild grasses led to the creation of domestic strains, as mutant forms ('sports') of wheat were preferentially chosen by farmers. In domesticated wheat, grains are larger, and the seeds (inside the spikelets) remain attached to the ear by a toughened rachis during harvesting. In wild strains, a more fragile rachis allows the ear to easily shatter and disperse the spikelets. Selection for larger grains and non-shattering heads by farmers might not have been deliberately intended, but simply have occurred because these traits made gathering the seeds easier; nevertheless such 'incidental' selection was an important part of crop domestication. As the traits that improve wheat as a food source also involve the loss of the plant's natural seed dispersal mechanisms, highly domesticated strains of wheat cannot survive in the wild.

Raw wheat can be ground into flour or, using hard durum wheat only, can be ground into semolina; germinated and dried creating malt; crushed or cut into cracked wheat; parboiled (or steamed), dried, crushed and de-branned into bulgur also known as groats. If the raw wheat is broken into parts at the mill, as is usually done, the outer husk or bran can be used in several ways.

Wheat is a major ingredient in such foods as bread, porridge, crackers, biscuits, muesli, pancakes, pasta, pies, pastries, pizza, semolina, cakes, cookies, muffins, rolls, doughnuts, gravy, beer, vodka, boza (a fermented beverage), and breakfast cereals. In manufacturing wheat products, gluten is valuable to impart viscoelastic functional qualities in dough, enabling the preparation of diverse processed foods such as breads, noodles, and pasta that facilitate wheat consumption.

In 100 grams, wheat provides 1,368 kilojoules (327 kilocalories) of food energy and is a rich source (20% or more of the Daily Value, DV) of multiple essential nutrients, such as protein, dietary fiber, manganese, phosphorus and niacin (table). Several B vitamins and other dietary minerals are in significant content. Wheat is 13% water, 71% carbohydrates, and 1.5% fat. Its 13% protein content is mostly gluten (75–80% of the protein in wheat).

These are broadly classified under **H.S. Code-1001.**

Table - 1

India's Top 10 destination of Wheat & Meslin (H.S Code-1001)

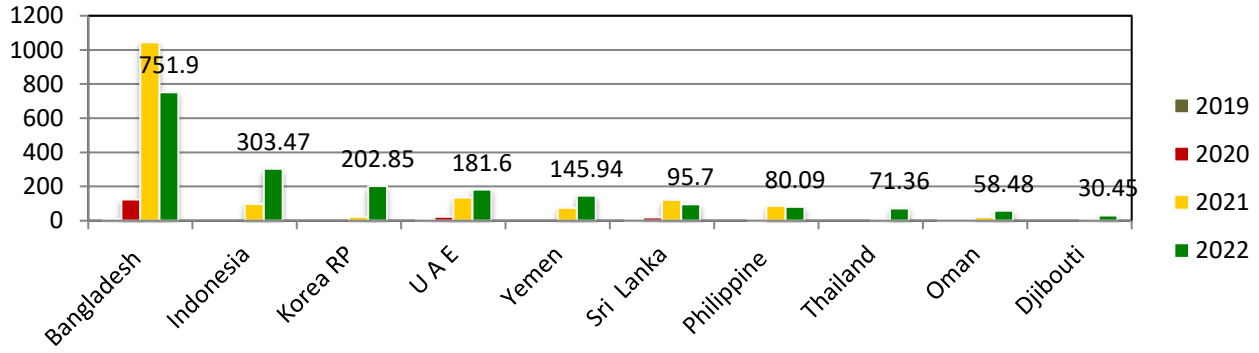
Rank	Countries	2019		2020		2021		2022	
		Value (million$)	Share (%)	Value (million$)	Share (%)	Value (million$)	Share (%)	Value (million$)	Share (%)
1.	Bangladesh	9.23	13.18	124.38	42.47	1044.61	59.97	751.90	34.52
2.	Indonesia	0.00	0.00	0.00	0.00	98.01	5.63	303.47	13.93
3.	Korea RP	0.00	0.00	0.00	0.00	22.22	1.28	202.85	9.31
4.	U A E	3.20	4.57	22.46	7.67	134.74	7.74	181.60	8.34
5.	Yemen	0.00	0.00	0.00	0.00	74.43	4.27	145.94	6.70
6.	Sri Lanka	0.73	1.04	19.03	6.50	122.84	7.05	95.70	4.39
7.	Philippine	0.00	0.00	0.37	0.13	85.62	4.92	80.09	3.68
8.	Thailand	0.00	0.00	0.00	0.00	3.37	0.19	71.36	3.28
9.	Oman	0.07	0.10	0.22	0.08	21.45	1.23	58.48	2.69
10.	Djibouti	0.00	0.00	0.00	0.00	3.21	0.18	30.45	1.40
	Others	56.75	81.10	126.37	43.16	131.36	7.54	256.27	11.77
	Total	69.98	100	292.84	100	1741.86	100	2178.11	100

Source: DGCI&S.

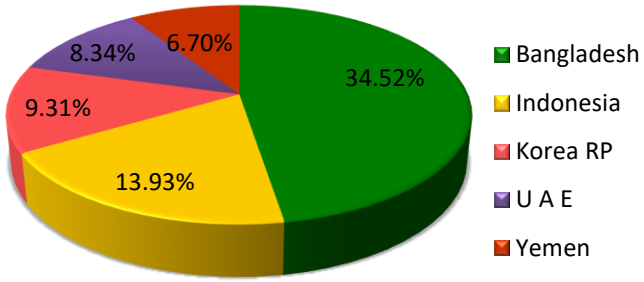
Note : India's Export including re-export

Leading importers of Wheat & Meslin from India from 2019-2022**(Values in million $)**

Data label given on the basis of 2022



India's top 5 destinations of Wheat & Meslin by percentage India in 2022:



In 2022 India has exported Wheat & Meslin of US $ 2.18 billion which was US $ 436.25 million more than the year 2021. The figures show the great potential for India's export of Wheat & Meslin to increase its share in global market in year by year. Bangladesh was the largest market for Wheat & Meslin export from India. In 2022, Bangladesh imported US $ 751.90 million worth of Wheat & Meslin from India, which was accounted 34.52 % of India's total export of Wheat & Meslin. It was followed by Indonesia (13.93%) and Korea Rep (9.31%). The top 10 countries account for 88.23 % of the total Wheat & Meslin export from India in that year.

Table-2

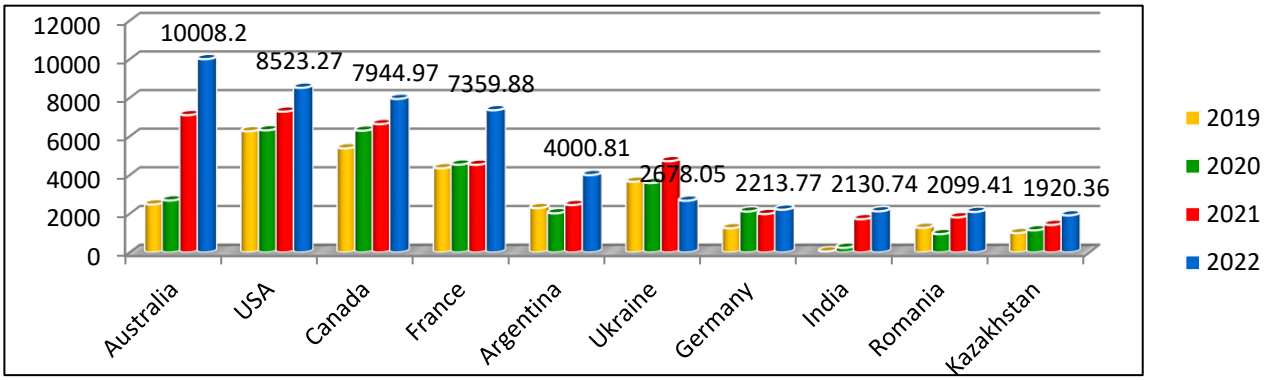
World's Top 10 exporter of Wheat & Meslin (H.S Code-1001)

Rank	Countries	2019		2020		2021		2022	
		Value (million $)	Share (%)	Value (million$)	Share (%)	Value (million$)	Share (%)	Value (million$)	Share (%)
1.	Australia	2482.62	6.15	2691.46	6.01	7105.52	12.82	10008.20	16.78
2.	USA	6265.92	15.53	6318.11	14.10	7286.65	13.15	8523.27	14.29
3.	Canada	5384.96	13.35	6299.14	14.06	6639.77	11.98	7944.97	13.32
4.	France	4355.47	10.80	4543.88	10.14	4535.98	8.19	7359.88	12.34
5.	Argentina	2295.53	5.69	2029.49	4.53	2454.06	4.43	4000.81	6.71
6.	Ukraine	3658.40	9.07	3594.22	8.02	4722.75	8.52	2678.05	4.49
7.	Germany	1252.36	3.10	2118.69	4.73	1989.46	3.59	2213.77	3.71
8.	**India**	**54.01**	**0.13**	**243.07**	**0.54**	**1723.43**	**3.11**	**2130.74**	**3.57**
9.	Romania	1272.16	3.15	948.82	2.12	1820.09	3.28	2099.41	3.52
10.	Kazakhstan	1002.58	2.49	1146.51	2.56	1425.57	2.57	1920.36	3.22
	Others	12316.66	30.53	14872.93	33.19	15713.48	28.36	10762.25	18.04
	Total	40340.68	100	44806.31	100	55416.75	100	59641.71	100

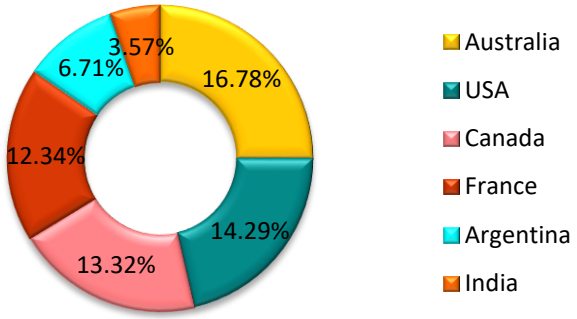
Source: UN Comtrade

Leading Exporters of Wheat & Meslin of world from 2019 to 2022 **(Values in million $)**

Data label given on the basis of 2022



Country wise world's leading exporter of Wheat & Meslin by percentage in 2022 :



The total worth value of Wheat & Meslin export around the world in year 2022 was US $ 59.64 Billion. Between 2021 and 2022 the exports of Wheat & Meslin increased by 7.62%, from 2021. Australia was the largest exporter of Wheat & Meslin in the world in 2022. In that year Wheat & Meslin exported US $ 10 Billion worth value of these commodities, which was accounted 16.78% of world export, which was followed by USA and Canada with share of 14.29 % and 13.32% of world export of Wheat & Meslin respectively. In that year India stood at 8th position in world export with 3.57% share.

Table-3

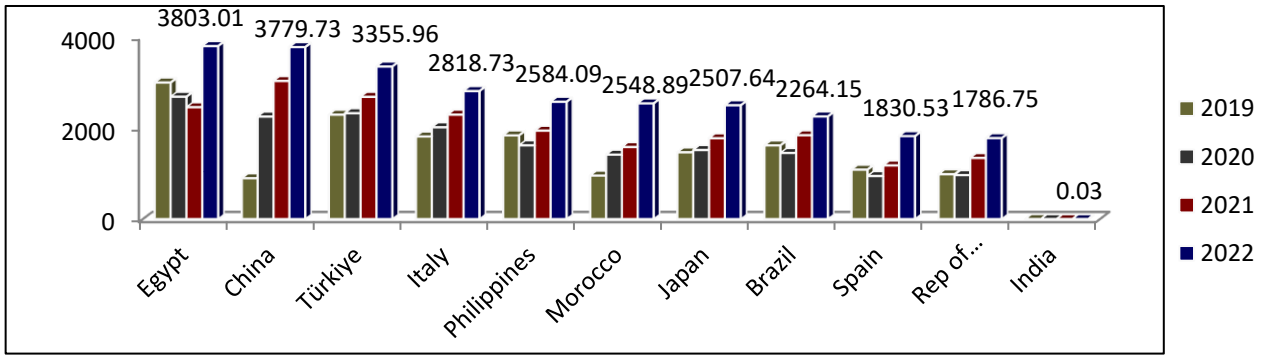
World's top 10 Importers of Wheat & Meslin (H.S Code-1001)

Rank	Countries	2019		2020		2021		2022	
		Value (million $)	Share (%)	Value (million$)	Share (%)	Value (million$)	Share (%)	Value (million$)	Share (%)
1.	Egypt	3004.84	7.59	2693.85	6.34	2465.06	4.71	3803.01	8.46
2.	China	901.03	2.28	2261.72	5.32	3038.67	5.81	3779.73	8.41
3.	Türkiye	2302.22	5.82	2334.51	5.49	2692.62	5.15	3355.96	7.47
4.	Italy	1823.22	4.61	2026.05	4.77	2302.81	4.40	2818.73	6.27
5.	Philippines	1847.09	4.67	1628.02	3.83	1950.91	3.73	2584.09	5.75
6.	Morocco	960.05	2.43	1422.02	3.35	1590.25	3.04	2548.89	5.67
7.	Japan	1473.28	3.72	1524.54	3.59	1784.28	3.41	2507.64	5.58
8.	Brazil	1626.04	4.11	1459.35	3.43	1850.96	3.54	2264.15	5.04
9.	Spain	1090.56	2.76	950.73	2.24	1183.51	2.26	1830.53	4.07
10.	Rep of Korea	989.82	2.50	970.45	2.28	1349.11	2.58	1786.75	3.97
96.	**India**	**0.59**	**0.00**	**0.07**	**0.00**	**0.02**	**0.00**	**0.03**	**0.00**
	Others	23557.09	59.52	25221.81	59.36	32105.04	61.37	17672.89	39.31
	Total	39575.84	100	42493.13	100	52313.25	100	44952.40	100

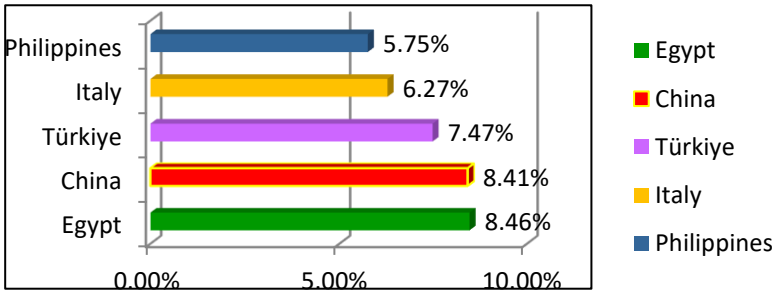
Source : UN Comtrade

Leading Wheat & Meslin importers of world from 2019 to 2022 **(Values in million $)**

Data label given on the basis of 2022



Country wise world's leading importers of Wheat & Meslin by percentage in 2022

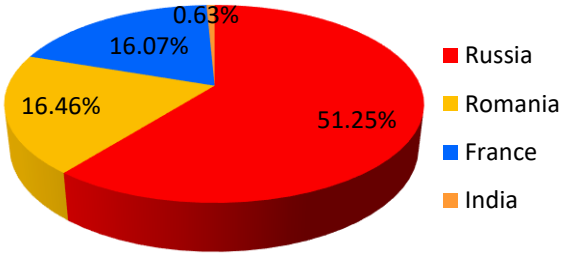


The total value of world import of Wheat & Meslin was US $ 44.95 Billion in 2022 which was down of US $ 7.36 Billion from the year 2021. In that year the top importing countries were Egypt (US $ 3.80 B), China (US $ 3.78 B), Turkey **(** US $ 33.55 B**)**, Italy (US $ 2.82B) and Philippines (US $ 2.58 B). In the same year India has no account.

Annexure-1

Sources of world's top 3 importers of Wheat & Meslin (H.S Code-1001)

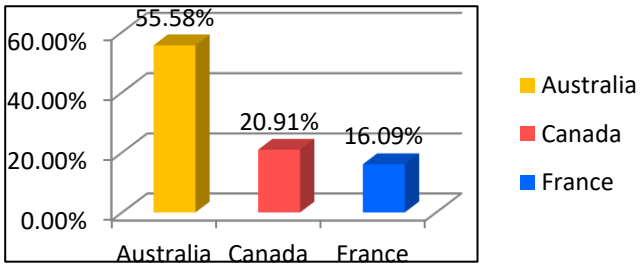
i) Top 3 Sources of Wheat & Meslin to Egypt in 2022 by percentage:



Egypt imported most of its requirement of Wheat & Meslin from Russia, 51.25% share of Egypt's total import value of it came from Russia in 2022 followed by Romania (16.46%) and France (16.07%). India' contribution was only 0.63% to Egypt in that year.

(Source : UN Comtrade).

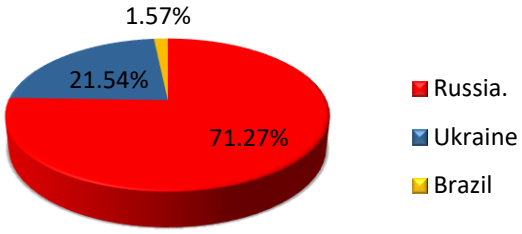
ii) Top 3 Sources of Wheat & Meslin to China in 2022 by percentage**:**



Australia was the primary source of Wheat & Meslin to China. China imported 55.58% of Wheat & Meslin from Australia in 2022, followed by Canada (20.91%) & France (16.09%). India has no account in that year to China.

(Source : UN Comtrade)

iii) Top 3 Sources of Wheat & Meslin to Turke in 2022 by percentage**:**



Turkey's 3 major source countries of Wheat & Meslin in 2022 were Russia (71.27%), Ukrain (21.54%) and Brazil (1.57%) . In the same year **India** has no trade of wheat and meslin to Turkey **(Source: UN Comtrade)**

Mens or Boys Shirts

A **shirt** is a cloth garment for the upper body . Originally an undergarment worn exclusively by men, it has become, in American English, a catch-all term for a broad variety of upper-body garments and undergarments. In British English, a shirt is more specifically a garment with a collar, sleeves with cuffs, and a full vertical opening with buttons or snaps (North Americans would call that a "dress shirt", a specific type of collared shirt). A shirt can also be worn with a necktie under the shirt collar.

The world's oldest preserved garment, discovered by Flinders Petrie, is a "highly sophisticated" linen shirt from a First Dynasty Egyptian tomb at Tarkan, dated to c. 3000 BC: "the shoulders and sleeves have been finely pleated to give form-fitting trimness while allowing the wearer room to move. The small fringe formed during weaving along one edge of the cloth has been placed by the designer to decorate the neck opening and side seam.

The shirt was an item of clothing that only men could wear as underwear, until the twentieth century. Although the women's chemise was a closely related garment to the men's, it is the men's garment that became the modern shirt. In the Middle Ages, it was a plain, undyed garment worn next to the skin and under regular garments. In medieval artworks, the shirt is only visible (uncovered) on humble characters, such as shepherds, prisoners, and penitents. In the seventeenth century, men's shirts were allowed to show, with much the same erotic import as visible underwear today.[5] In the eighteenth century, instead of underpants, men "relied on the long tails of shirts ... to serve the function of drawers. Eighteenth-century costume historian Joseph Strutt believed that men who did not wear shirts to bed were indecent. Even as late as 1879, a visible shirt with nothing over it was considered improper.

Shirts are made of woven cloth. The natural fibers used more commonly in the past were cotton (the most frequent), linen (the oldest), ramie, wool or silk. Nowadays, artificial fibers, such as polyester or polyester blends, are also used, due to their low cost, despite being considered by most shirtmakers the poorest material, owing to less softness and breathability.[6] However, while high quality cotton shirts can survive with care a few decades, a polyester/cotton blend may be used in more demanding environments. Giza cotton is a type of high-quality cotton which is the preferred choice among high-end shirtmakers, because of its long staple length. Linen produces a cool fabric that wrinkles heavily, and is mostly used in light summer shirts. Cotton is therefore the standard material for all but the cheapest shirts. Silk is occasionally worn, though it is hot to wear and has a marked sheen.

Yarns from these fibers are woven into a variety of different weaves, the most notable of which include broadcloth, with double the number of warp to weft threads, giving a smooth, formal shirting; twill, where the tucks of the weft do not line up, giving a diagonal pattern, a weave used for most country checked (*e.g.* tattersall) shirtings; poplin, with a heavier warp than weft, giving more formal fabric and Oxford weaves. Plain Oxford or pinpoint Oxford weaves are popular as casual fabrics, so are generally used in combination with a button-down collar, while royal Oxford is versatile enough to be used on both sporty and formal shirts. There are many other weaves or variations on these, including end-on-end patterns, where alternate white and coloured threads are used, giving a mottled appearance, or more exotic weaves, including voile and batiste, which are extremely light fabrics only used for summer shirts or on the unseen parts of formal shirts.

There are two main categories of fibres used: natural fibre and man-made fibre (synthetics or petroleum based). Some natural fibres are linen, the first used historically, hemp, cotton, the most used, ramie, wool, silk and more recently bamboo or soya. Some synthetic fibres are polyester, tencel, viscose, etc. Polyester mixed with cotton (poly-cotton) is often used. Fabrics for shirts are called shirtings. The four main weaves for shirtings are plain weave, oxford, twill and satin. Broadcloth, poplin and end-on-end are variations of the plain weave. After weaving, finishing can be applied to the fabric.

These are broadly classified under **H.S. Code-6205.**

Table – 4

India's Top 10 destination of Mens or Boys Shirts (H.S Code-6205)

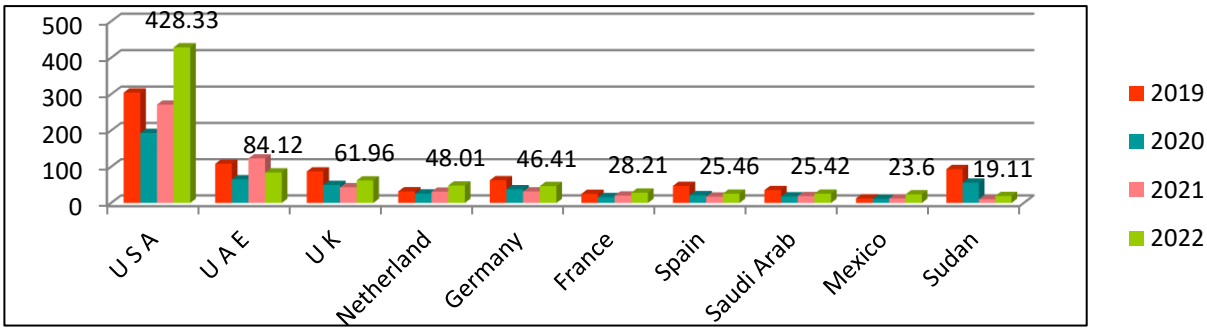
Rank	Countries	2019		2020		2021		2022	
		Value (million$)	Share (%)	Value (million$)	Share (%)	Value (million$)	Share (%)	Value (million$)	Share (%)
1.	U S A	304.35	28.11	193.04	28.26	271.13	35.17	428.33	40.87
2.	U A E	108.17	9.99	65.06	9.53	122.72	15.92	84.12	8.03
3.	U K	86.84	8.02	49.70	7.28	43.14	5.59	61.96	5.91
4.	Netherland	31.93	2.95	25.84	3.78	31.03	4.02	48.01	4.58
5.	Germany	62.52	5.77	37.60	5.50	31.69	4.11	46.41	4.43
6.	France	24.87	2.30	15.99	2.34	20.18	2.62	28.21	2.69
7.	Spain	46.81	4.32	21.16	3.10	17.35	2.25	25.46	2.43
8.	Saudi Arab	35.36	3.27	17.91	2.62	18.77	2.43	25.42	2.43
9.	Mexico	12.37	1.14	10.90	1.60	12.48	1.62	23.60	2.25
10.	Sudan	93.31	8.62	55.85	8.18	10.19	1.32	19.11	1.82
	Others	276.15	25.51	189.97	27.81	192.34	24.95	257.41	24.56
	Total	1082.69	100	683.02	100	771.00	100	1048.05	100

Source: DGCI&S

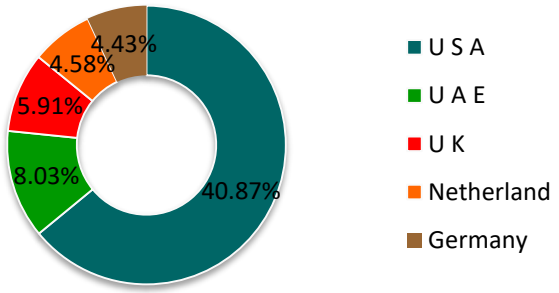
Note : India's Export including re-export

India's major destination Men's or Boys Shirts from 2019-2022**(Values in million USD)**

Data label given on the basis of 2022



India's top 5 destinations of Mens or Boys Shirts Wire by percentage in 2022:



In 2022 Mens or Boys Shirts is exported to over 190 countries from India . In the year 2022, India has exported Mens or Boys Shirts worth of US $ 1.05 billion which was over 35.93% more than the year 2021. The table shows that the trends of Aluminium wire export from India was increasing from 2020 to 2021. In 2022 USA was the top most destination of Indian Mens or Boys Shirts. It has imported US $ 428.33 million worth or 40.87% Mens or Boys Shirts from India which was followed by UAE and UK with the Mens or Boys Shirts shipment value being U S $ 84.12 Million and US $ 61.96 Million respectively. The top 10 countries in total shared the share of 75.44% of the Mens or Boys Shirts export value from India.

Table - 5

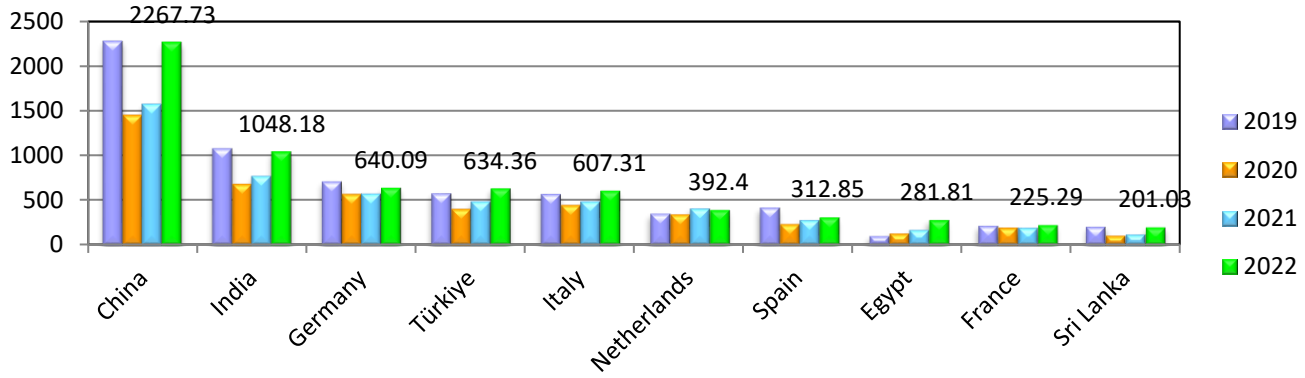
World's Top 10 exporter of Mens or Boys Shirts (H.S Code-6205)

Rank	Countries	2019		2020		2021		2022	
		Value (million $)	Share (%)	Value (million$)	Share (%)	Value (million$)	Share (%)	Value (million$)	Share (%)
1.	China	2280.58	19.58	1444.71	17.63	1579.65	18.44	2267.73	25.91
2.	India	1081.90	9.29	680.11	8.30	773.41	9.03	1048.18	11.97
3.	Germany	714.29	6.13	571.18	6.97	578.42	6.75	640.09	7.31
4.	Türkiye	580.20	4.98	403.00	4.92	489.79	5.72	634.36	7.25
5.	Italy	574.33	4.93	447.02	5.45	489.48	5.71	607.31	6.94
6.	Netherlands	355.40	3.05	342.01	4.17	410.25	4.79	392.40	4.48
7.	Spain	422.20	3.63	234.50	2.86	283.68	3.31	312.85	3.57
8.	Egypt	102.40	0.88	131.80	1.61	169.42	1.98	281.81	3.22
9.	France	217.46	1.87	196.57	2.40	194.78	2.27	225.29	2.57
10.	Sri Lanka	206.17	1.77	107.65	1.31	120.80	1.41	201.03	2.30
	Others	5111.46	43.89	3636.68	44.38	3476.24	40.58	2142.80	24.48
	Total	11646.38	100	8195.24	100	8565.92	100	8753.85	100

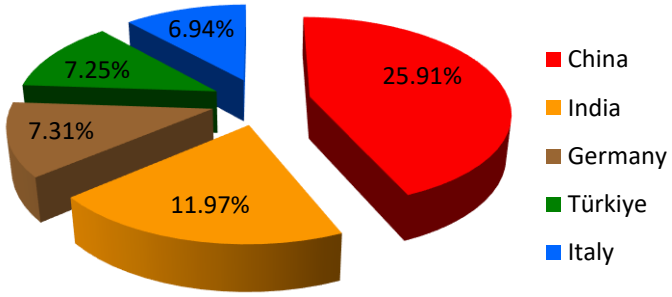
Source: UN Comtrade

Top world exporters of Men's or Boys Shirts from 2019 to 2022 **(Values in million USD)**

Data label given on the basis of 2022



Export trends in world's leading Men's or Boys Shirts exporters by percentage in 2022:



Global export of Men's or Boys Shirts was totaled US $ 8.75 Billion in 2022, which was highest in 2019 (US $ 11.65 B) . In 2022 the total export value increased at an rate of 2.19 % from 2021. China represented the major exporter of Men's or Boys Shirts in the world, exported 25.91% share of world export in 2022. **India** and Germany constitutes the 2nd and 3rd largest exporter of Men's or Boys Shirts in that year with 11.97% and 7.31% share of world export respectively. The top 10 countries together export more than 75.52% share of world export of Men's or Boys Shirts in 2022.

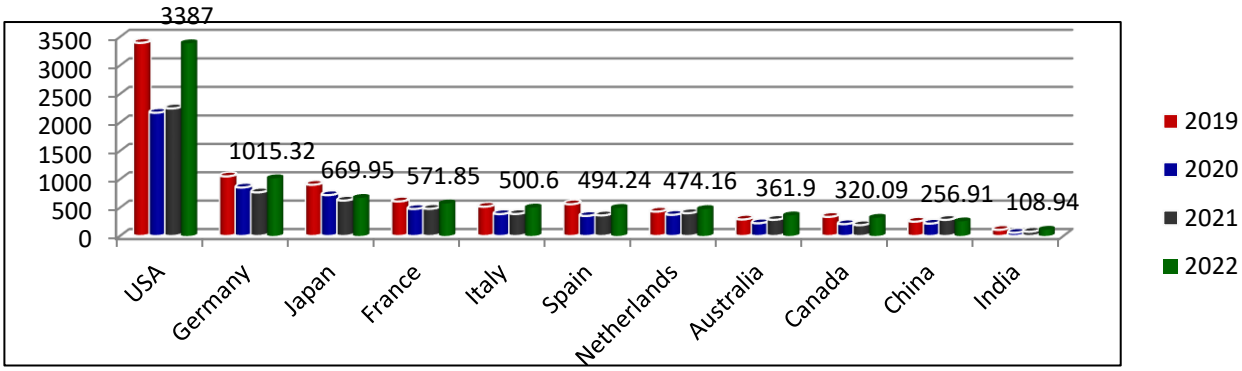
Table - 6

World's top 10 Importers of Mens or Boys Shirts (H.S Code-6205)

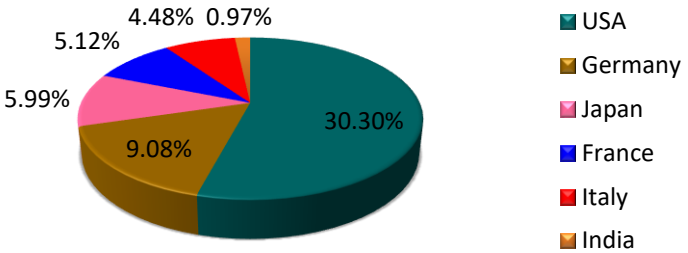
Rank	Countries	2019		2020		2021		2022	
		Value (million $)	Share (%)	Value (million$)	Share (%)	Value (million$)	Share (%)	Value (million$)	Share (%)
1.	USA	3394.81	25.40	2170.06	22.73	2245.88	23.25	3387.00	30.30
2.	Germany	1050.43	7.86	854.21	8.95	768.69	7.96	1015.32	9.08
3.	Japan	902.47	6.75	720.03	7.54	624.21	6.46	669.95	5.99
4.	France	609.02	4.56	476.39	4.99	479.28	4.96	571.85	5.12
5.	Italy	515.77	3.86	386.22	4.05	387.71	4.01	500.60	4.48
6.	Spain	559.49	4.19	353.31	3.70	362.95	3.76	494.24	4.42
7.	Netherlands	429.61	3.21	372.77	3.91	402.53	4.17	474.16	4.24
8.	Australia	291.03	2.18	224.30	2.35	284.82	2.95	361.90	3.24
9.	Canada	336.85	2.52	208.89	2.19	190.74	1.97	320.09	2.86
10.	China	252.80	1.89	218.11	2.29	284.03	2.94	256.91	2.30
19.	India	107.95	0.81	57.25	0.60	75.24	0.78	108.94	0.97
	Others	5025.52	37.59	3561.06	37.31	3630.75	37.58	3125.07	27.96
	Total	13367.80	100	9545.36	100	9661.59	100	11177.08	100

Source :UNComtrade

Top world importers of Men's or Boys Shirts from 2019 to 2022 **(Values in million USD)**
Data label given on the basis of 2022



Country wise leading global Importer of Men's or Boys Shirts by percentage in 2022

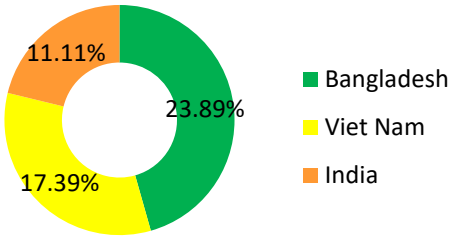


USA imported around US $ 3.39 billion worth of Men's or Boys Shirts in 2022, making it the leading importer of Men's or Boys Shirts worldwide that year. Germany followed in the second place, importing around US $ 1.01 billion worth of Men's or Boys Shirts. It was followed by japan, imported around US $ 669.95 Million of Men's or Boys Shirts in the same year. **India's** share was 0.97% share of world import and making it the 19th largest importer world wide in that year.

Annexure-II

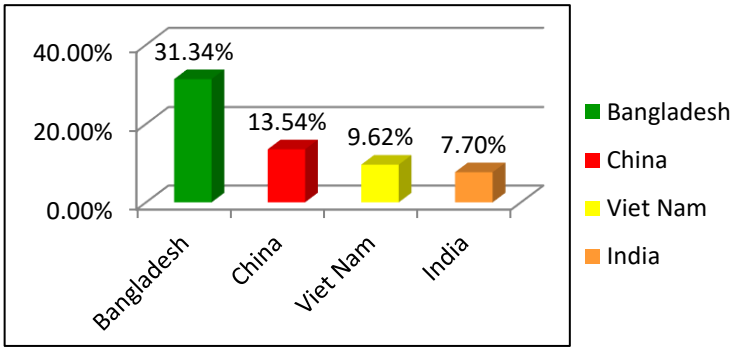
Sources of world's top three importers of Mens or Boys Shirts (H.S Code-6205)

(i) Top 3 Sources of Men's or Boys Shirts to USA in 2022 by percentage:



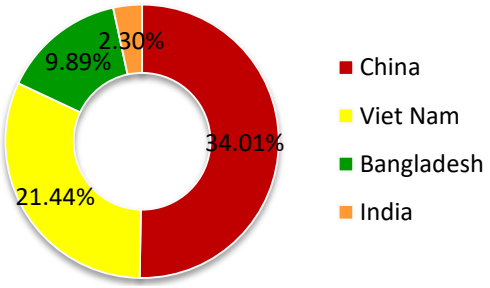
In the year 2022 USA, imports largest worth value of Men's or Boys Shirts, 23.89% share imported from Bangladesh, which was followed by Vietnam (17.39 %) and **India** (11.11%). **(Source: UN Comtrade)**

(ii) Top 3 Sources of Men's or Boys Shirts to Germany in 2022 by percentage**:**



Bangladesh was the number one source of Men's or Boys Shirts to Germany, imports 31.34% share from Bangladesh, 13.54% from China and 9.62% share from Viet Nam in 2022. In the same year **India** has exported 7.70% share of Men's or Boys Shirts to Germany. **(Source: UN Comtrade)**

(iii) Top 3 Sources of Men's or Boys Shirts to Japan in 2022 by percentage**:**



China was the largest source country of Men's or Boys Shirts to Japan in 2022, it imports, more than 34% share of its import of Men's or Boys Shirts from China which was followed by Viet Nam (21.44%) and Bangladesh (9.89%) . In that year **India** has exported 2.30% share of Men's or Boys Shirts to Germany **(Source : UN Comtrade)**

IMPORT

Silicon in Primary form

Silicon is a chemical element with the symbol **Si** and atomic number 14. It is a hard, brittle crystalline solid with a blue-grey metallic luster, and is a tetravalent metalloid and semiconductor. It is a member of group 14 in the periodic table: carbon is above it; and germanium, tin, lead, and flerovium are below it. It is relatively unreactive.

Because of its high chemical affinity for oxygen, it was not until 1823 that Jöns Jakob Berzelius was first able to prepare it and characterize it in pure form. Its oxides form a family of anions known as silicates. Its melting and boiling points of 1414 °C and 3265 °C, respectively, are the second highest among all the metalloids and nonmetals, being surpassed only by boron.

Most silicon is used commercially without being separated, often with very little processing of the natural minerals. Such use includes industrial construction with clays, silica sand, and stone. Silicates are used in Portland cement for mortar and stucco, and mixed with silica sand and gravel to make concrete for walkways, foundations, and roads. They are also used in whiteware ceramics such as porcelain, and in traditional silicate-based soda–lime glass and many other specialty glasses. Silicon compounds such as silicon carbide are used as abrasives and components of high-strength ceramics. Silicon is the basis of the widely used synthetic polymers called silicones.

The late 20th century to early 21st century has been described as the Silicon Age (also known as the Digital Age or Information Age) because of the large impact that elemental silicon has on the modern world economy. The small portion of very highly purified elemental silicon used in semiconductor electronics is essential to the transistors and integrated circuit chips used in most modern technology such as smartphones and other computers. In 2019, 32.4% of the semiconductor market segment was for networks and communications devices, and the semiconductors industry is projected to reach $726.73 billion by 2027.

Most silicon is used industrially without being purified, often with comparatively little processing from its natural form. More than 90% of the Earth's crust is composed of silicate minerals, which are compounds of silicon and oxygen, often with metallic ions when negatively charged silicate anions require cations to balance the charge. Many of these have direct commercial uses, such as clays, silica sand, and most kinds of building stone. Thus, the vast majority of uses for silicon are as structural compounds, either as the silicate minerals or silica (crude silicon dioxide). Silicates are used in making Portland cement (made mostly of calcium silicates) which is used in building mortar and modern stucco, but more importantly, combined with silica sand, and gravel (usually containing silicate minerals such as granite), to make the concrete that is the basis of most of the very largest industrial building projects of the modern world.

Silica is used to make fire brick, a type of ceramic. Silicate minerals are also in whiteware ceramics, an important class of products usually containing various types of fired clay minerals (natural aluminium phyllosilicates). An example is porcelain, which is based on the silicate mineral kaolinite. Traditional glass (silica-based soda–lime glass) also functions in many of the same ways, and also is used for windows and containers. In addition, specialty silica based glass fibers are used for optical fiber, as well as to produce fiberglass for structural support and glass wool for thermal insulation.

Silicones often are used in waterproofing treatments, molding compounds, mold-release agents, mechanical seals, high temperature greases and waxes, and caulking compounds. Silicone is also sometimes used in breast implants, contact lenses, explosives and pyrotechnics. Silly Putty was originally made by adding boric acid to silicone oil. Other silicon compounds function as high-technology abrasives and new high-strength ceramics based upon silicon carbide. Silicon is a component of some superalloys.

These are broadly classified under **H. S. Code 3910**

Table - 7

India's Top 10 Sources of Silicon in Primary form (H.S. Code - 3910)

Rank	Countries	2019		2020		2021		2022	
		Value (million $)	Share (%)	Value (million$)	Share (%)	Value (million$)	Share (%)	Value (million$)	Share (%)
1.	China	75.10	30.66	59.38	31.54	103.99	36.32	168.93	40.18
2.	Germany	70.39	28.74	54.97	29.20	77.32	27.01	100.50	23.91
3.	U S A	25.63	10.46	20.63	10.96	27.98	9.77	37.41	8.90
4.	Thailand	16.76	6.84	10.00	5.31	12.48	4.36	27.21	6.47
5.	Korea RP	11.21	4.58	8.69	4.62	12.48	4.36	18.71	4.45
6.	Belgium	16.25	6.64	10.92	5.80	13.63	4.76	17.20	4.09
7.	Japan	11.58	4.73	8.63	4.58	12.83	4.48	14.89	3.54
8.	U K	2.35	0.96	1.43	0.76	2.63	0.92	7.64	1.82
9.	Netherland	3.17	1.29	3.19	1.69	4.32	1.51	6.76	1.61
10.	Vietnam	0.03	0.01	0.67	0.35	3.81	1.33	3.46	0.82
	Others	12.48	5.09	9.72	5.17	14.87	5.19	17.69	4.21
	Total	244.95	100	188.24	100	286.33	100	420.40	100

Source: DGCI&S

Note : India's Import including re-import

Imports of Silicon in Primary form to India increased to US $ 420.40 Million in 2022 from US $ 286.33 Million in 2021. Over the period under review, global Silicon in Primary form imports attained its maximum worth value of US $ 420.40 Million in 2022. In 2022 India imported the highest dollar worth of Silicon in Primary form from China with valued at US $ 168.93 Million. In Second and Third source countries were Germany and USA , from where India imported around US $ 100.50 Million and US $ 37.41 Million worth of Silicon in Primary form respectively. In the same year. The top 10 countries shared 95.79% of the Silicon in Primary form import to India.

Table - 8

World's Top 10 Importer of Silicon in Primary form (H.S. Code - 3910)

Rank	Countries	2019		2020		2021		2022	
		Value (million$)	Share (%)	Value (million$)	Share (%)	Value (million$)	Share (%)	Value (million$)	Share (%)
1.	USA	619.31	8.18	559.14	8.37	735.86	8.35	1259.90	14.36
2.	China	841.07	11.10	817.57	12.24	927.80	10.52	913.88	10.42
3.	Germany	488.00	6.44	434.71	6.51	567.51	6.44	748.83	8.53
4.	Rep. of Korea	505.71	6.68	433.14	6.48	617.17	7.00	618.92	7.05
5.	Italy	361.65	4.77	312.64	4.68	414.31	4.70	513.98	5.86
6.	Netherlands	281.76	3.72	248.37	3.72	350.96	3.98	499.85	5.70
7.	**India**	**244.87**	**3.23**	**188.86**	**2.83**	**286.58**	**3.25**	**419.23**	**4.78**
8.	France	304.83	4.02	243.44	3.64	307.17	3.48	388.11	4.42
9.	Mexico	220.12	2.91	196.83	2.95	251.96	2.86	344.94	3.93
10.	Brazil	154.38	2.04	153.52	2.30	191.63	2.17	279.66	3.19
	Others	3553.62	46.91	3091.50	46.28	4164.46	47.24	2787.07	31.76
	Total	7575.31	100	6679.73	100	8815.42	100	8774.36	100

Source :UNComtrade

In 2022 Global import of Silicon in Primary form totaled were US $ 8.77 Billion, which was decreased by more than 0.46% from the year of 2021. Global import of the Silicon in Primary form peaked the highest dollar value of US $ 8.81 Billion in 2021. In value terms, USA constitutes the largest market for imported Silicon in Primary form worldwide with worth value of US $ 1.26 Billion, making up 14.36% of global imports. The second position in the ranking was occupied by China (US $ 913.88 M), with the share of 10.42 % of global imports. It was followed by the Germany with the share of 8.53%. In the same year **India** constitutes the 7th position in ranking with 4.78 % share of world import.

Insulating fittings for Electrical Machines

An electrical insulator is a material in which electric current does not flow freely. The atoms of the insulator have tightly bound electrons which cannot readily move. Other materials—semiconductors and conductors—conduct electric current more easily. The property that distinguishes an insulator is its resistivity; insulators have higher resistivity than semiconductors or conductors. The most common examples are non-metals.

A perfect insulator does not exist because even insulators contain small numbers of mobile charges which can carry current. In addition, all insulators become electrically conductive when a sufficiently large voltage is applied that the electric field tears electrons away from the atoms. This is known as electrical breakdown, and the voltage at which it occurs is called the breakdown voltage of an insulator. Some materials such as glass, paper and PTFE, which have high resistivity, are very good electrical insulators. A much larger class of materials, even though they may have lower bulk resistivity, are still good enough to prevent significant current from flowing at normally used voltages, and thus are employed as insulation for electrical wiring and cables. Examples include rubber-like polymers and most plastics which can be thermoplastic in nature.

Insulators are used in electrical equipment to support and separate electrical conductors without allowing current through themselves. An insulating material used in bulk to wrap electrical cables or other equipment is called *insulation*. The term *insulator* is also used more specifically to refer to insulating supports used to attach electric power distribution or transmission lines to utility poles and transmission towers. They support the weight of the suspended wires without allowing the current to flow through the tower to ground.

A flexible coating of an insulator is often applied to electric wire and cable; this assembly is called *insulated wire*. Wires sometimes don't use an insulating coating, just air, when a solid (e.g. plastic) coating may be impractical. Wires that touch each other produce cross connections, short circuits, and fire hazards. In coaxial cable the center conductor must be supported precisely in the middle of the hollow shield to prevent electro-magnetic wave reflections. Wires that expose high voltages can cause human shock and electrocution hazards.

Most insulated wire and cable products have maximum ratings for voltage and conductor temperature. The product may not have an ampacity rating, since this is dependent on the surrounding environment.

In electronic systems, printed circuit boards are made from epoxy plastic and fibreglass. The nonconductive boards support layers of copper foil conductors. In electronic devices, the tiny and delicate active components are embedded within nonconductive epoxy or phenolic plastics, or within baked glass or ceramic coatings. In microelectronic components such as transistors and ICs, the silicon material is normally a conductor because of doping, but it can easily be selectively transformed into a good insulator by the application of heat and oxygen. Oxidised silicon is quartz, i.e. silicon dioxide, the primary component of glass. In high voltage systems containing transformers and capacitors, liquid insulator oil is the typical method used for preventing arcs. Other high voltage system insulation materials include ceramic or glass wire holders, gas, vacuum, and simply placing wires far enough apart to use air as insulation. The most important insulation material is air. A variety of solid, liquid, and gaseous insulators are also used in electrical apparatus. In smaller transformers, generators, and electric motors, insulation on the wire coils consists of up to four thin layers of polymer varnish film. Film-insulated magnet wire permits a manufacturer to obtain the maximum number of turns within the available space. Windings that use thicker conductors are often wrapped with supplemental fiberglass insulating tape. Windings may also be impregnated with insulating varnishes to prevent electrical corona and reduce magnetically induced wire vibration. Large power transformer windings are still mostly insulated with paper, wood, varnish, and mineral oil; although these materials have been used for more than 100 years, they still provide a good balance of economy and adequate performance. Busbars and circuit breakers in switchgear may be insulated with glass-reinforced plastic insulation, treated to have low flame spread and to prevent tracking of current across the material.

These are broadly classified under the ITCHS Code-8547.

Table 9

India's Top 10 Sources of Insulating Fittings for Electrical Machines (HS Code- 8547)

Rank	Countries	2019		2020		2021		2022	
		Value (million $)	Share (%)	Value (million$)	Share (%)	Value (million$)	Share (%)	Value (million$)	Share (%)
1.	Korea RP	26.49	17.12	31.97	21.02	46.85	21.02	46.27	23.08
2.	Japan	26.13	16.88	26.75	17.58	40.52	18.18	41.48	20.69
3.	China	22.39	14.47	19.42	12.77	23.40	10.50	24.40	12.17
4.	Singapore	7.38	4.77	9.25	6.08	13.18	5.91	15.12	7.54
5.	Germany	10.68	6.90	11.05	7.26	12.42	5.57	13.25	6.61
6.	U S A	10.57	6.83	9.59	6.30	11.75	5.27	10.05	5.01
7.	Thailand	1.72	1.11	4.70	3.09	7.39	3.32	9.75	4.87
8.	U A E	25.42	16.43	23.12	15.20	37.12	16.65	8.19	4.08
9.	Poland	3.35	2.16	1.54	1.01	4.93	2.21	5.78	2.88
10.	Belgium	3.01	1.94	2.13	1.40	2.81	1.26	3.46	1.72
	Others	17.62	11.38	12.61	8.29	22.54	10.11	22.72	11.33
	Total	154.75	100	152.12	100	222.91	100	200.45	100

Source: DGCI&S

Note : India's Import including re-import

There are 67 countries India imports Insulating Fittings for Electrical Machines from. The dollar value of Insulating Fittings for Electrical Machines import in 2022 stood at US $ 200.45 Million and US $ 222.91 Million in 2021. Which shows a negative growth of 10.08 % from 2021. In 2022 India imported the highest dollar worth of Insulating Fittings for Electrical Machines from Korea RP with valued at US $ 46.27 Million. In Second and Third major sources were Japan and China, from where India imported around US $ 41.48 Million and US $ 24.40 Million worth of Insulating Fittings for Electrical Machines respectively. In the same year The top 10 countries shared 88.67% of the import to India

Table 10

World's top 10 Importers of Insulating Fittings for Electrical Machines(HS Code-8547)

Rank	Countries	2019		2020		2021		2022	
		Value (million$)	Share (%)	Value (million$)	Share (%)	Value (million$)	Share (%)	Value (million$)	Share (%)
1.	China	631.61	11.29	685.53	12.68	791.80	11.77	727.95	12.87
2.	Germany	699.91	12.51	607.80	11.24	701.32	10.43	698.30	12.35
3.	USA	333.72	5.97	362.78	6.71	467.68	6.95	448.47	7.93
4.	Czechia	328.32	5.87	324.12	6.00	443.82	6.60	426.04	7.53
5.	Mexico	239.99	4.29	217.59	4.02	275.05	4.09	295.46	5.23
6.	Romania	262.49	4.69	230.86	4.27	258.91	3.85	280.55	4.96
7.	Hungary	220.79	3.95	196.48	3.63	227.73	3.39	216.02	3.82
8.	**India**	**154.71**	**2.77**	**152.26**	**2.82**	**222.68**	**3.31**	**201.20**	**3.56**
9.	Rep. of Korea	127.84	2.29	155.17	2.87	205.41	3.05	197.16	3.49
10.	Türkiye	108.77	1.94	114.55	2.12	146.74	2.18	161.22	2.85
	Others	2486.40	44.44	2359.04	43.64	2985.72	44.38	2001.85	35.40
	Total	5594.55	100	5406.18	100	6726.88	100	5654.24	100

Source: UN Comtrade

Global imports of Insulating Fittings for Electrical Machines amounted to US $ 5.65 Billion in 2022, approximately decreasing by 15.95 % from the year 2021. Over the period under review, global Insulating Fittings for Electrical Machines imports attained its maximum worth value of US $ 6.73 Billion in 2021. In 2022 China (US $ 727.95 M) constitutes the largest market for imported Insulating Fittings for Electrical Machines worldwide, making up 12.87 % of global imports. The second position in the ranking was occupied by Germany(US $ 698.30 M), with the share of 12.35 % of global imports. It was followed by the USA, with the share of 7.93 %. In the same year **India** has imported US $ 201.20 Million of Insulating Fittings for Electrical Machines from world and occupied 8th position in ranking with 3.56% share of world import of Insulating Fittings for Electrical Machines.