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 **Crustacean and Men's or Boys Shirts** and imports of **Safe Glass and Self Adhesive Plastic Materials** 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-0306& 6105for export and 7007and 3919 for import) and the latest finalized data available on the UN Comtrade Database up to year 2020 and on the DGCI&S Database up to December'2021. So, trends from 2017 to 2020 have been shown when we extract the data from UN Comtrade and from 2018 to 2021 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 Crustaceans &Men's or Boys Shirts and import trade of Safety Glass and Self Adhesive Plastic Materials. We will use both the 4 digit Commodity codes, for our analysis, as appropriate.

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 Crustacean with their shares in percentage.
- Table 2 : World's top 10 Exporters of Crustacean with their shares in percentage.
- Table 3 : World's top 10 Importers of Crustacean with their shares in percentage.
- Annex- I : Top 3 sources of Crustacean of World's top 3 Importers.
- Table 4 : India's top 10 Export destination of Men's Shirt with their shares in percentage.
- Table 5: World's top 10 Exporters of Men's Shirt with their shares in percentage.
- Table 6 : World's top 10 Importers of Men's Shirt with their shares in percentage.
- Annex-II : Top 3 sources of Men's Shirt of World's top 3 Importers.
- Table 7 : India's top10 Sources of Safety Glass with their shares in percentage.
- Table 8 : World's top 10 Importers of Safety Glass with their shares in percentage.
- Table 9 : India's top 10 Sources of Self Adhesive Plastic materials with their shares in percentage.
- Table 10 : World's top 10 Importers of Self Adhesive Plastic materials with their shares in percentage.

EXPORT

Crustaceans

Crustaceans form a large, diverse arthropodtaxon which includes such animals as crabs, lobsters, crayfish, shrimp, krill, prawns, woodlice, barnacles, copepods, amphipods and mantis shrimp. The crustacean group can be treated as a subphylum under the cladeMandibulata; because of recent molecular studies it is now well accepted that the crustacean group is paraphyletic, and comprises all animals in the clade Pancrustacea other than hexapods. Some crustaceans (Remipedia, Cephalocarida, Malacostraca) are more closely related to insects and the other hexapods than they are to certain other crustaceans.

The 67,000 described species range in size from Stygotantulusstocki at 0.1 mm (0.004 in), to the Japanese spider crab with a leg span of up to 3.8 m (12.5 ft) and a mass of 20 kg (44 lb). Like other arthropods, crustaceans have an exoskeleton, which they moult to grow. They are distinguished from other groups of arthropods, such as insects, myriapods and chelicerates, by the possession of biramous (two-parted) limbs, and by their larval forms, such as the nauplius stage of branchiopods and copepods.

Most crustaceans are free-living aquatic animals, but some are terrestrial (e.g. woodlice), some are parasitic (e.g. Rhizocephala, fish lice, tongue worms) and some are sessile (e.g. barnacles). The group has an extensive fossil record, reaching back to the Cambrian. More than 7.9 million tons of crustaceans per year are produced by fishery or farming for human consumption, most of it being shrimp and prawns. Krill and copepods are not as widely fished, but may be the animals with the greatest biomass on the planet, and form a vital part of the food chain. The scientific study of crustaceans is known as carcinology (alternatively, malacostracology, crustaceology or crustalogy), and a scientist who works in carcinology is a carcinologist.

Most crustaceans are aquatic, living in either marine or freshwater environments, but a few groups have adapted to life on land, such as terrestrial crabs, terrestrial hermit crabs, and woodlice. Marine crustaceans are as ubiquitous in the oceans as insects are on land. Most crustaceans are also motile, moving about independently, although a few taxonomic units are parasitic and live attached to their hosts (including sea lice, fish lice, whale lice, tongue worms, and Cymothoaexigua, all of which may be referred to as "crustacean lice"), and adult barnacles live a sessile life – they are attached headfirst to the substrate and cannot move independently. Some branchiurans are able to withstand rapid changes of salinity and will also switch hosts from marine to non-marine species.Krill are the bottom layer and the most important part of the food chain in Antarctic animal communities. Some crustaceans are significant invasive species, such as the Chinese mitten crab, Eriocheirsinensis, and the Asian shore crab, Hemigrapsussanguineus.

Crustaceans have numerous direct and indirect benefits for the economy as well as human health. For instance, shrimps, crabs, lobsters and other large crustaceans are globally recognized as edible aquatic organisms. Furthermore, the Indonesian maritime has a yearly economic potential of 1.33 trillion USD. Shrimps are the most significant aquatic export commodity, and compose 45% of the country's total fishery export. The worldwide demand for Indonesian shrimp is approximately 560,000–570,000 tons per year, and about 57% of this figure is imported by the United States, the largest destination. Over 60% of the total aquatic produce exported to the US in 2016 was solely shrimp, and this was estimated to cost more than 1 billion USD, and to increase by 2017 in order to meet the increasing global demand.

These are broadly classified under H.S. Code-0306

Rank	Countries	2018	8	2019)	2020)	2021	
		Value	Share	Value	Share	Value	Share	Value	Share
		(million\$)	(%)	(million\$)	(%)	(million\$)	(%)	(million\$)	(%)
1.	U S A	1924.43	43.03	2096.26	44.86	1086.31	45.61	2571.12	49.00
2.	China	297.51	6.65	965.08	20.65	371.03	15.58	787.42	15.01
3.	Japan	319.61	7.15	333.34	7.13	203.36	8.54	351.33	6.70
4.	Viet Nam	838.73	18.75	194.86	4.17	131.79	5.53	258.00	4.92
5.	UAE	173.75	3.88	177.73	3.80	98.37	4.13	146.00	2.78
6.	Belgium	109.37	2.45	105.20	2.25	62.30	2.62	132.10	2.52
7.	Canada	104.38	2.33	92.30	1.98	64.64	2.71	130.04	2.48
8.	UK	115.32	2.58	116.91	2.50	61.32	2.57	129.50	2.47
9.	Russia	61.03	1.36	81.48	1.74	38.52	1.62	117.52	2.24
10.	Netherland	98.07	2.19	82.96	1.78	49.79	2.09	107.93	2.06
	Others	430.32	9.62	427.08	9.14	214.17	8.99	516.22	9.84
	Total	4472.52	100	4673.22	100	2381.61	100	5247.18	100

India's Top 10 destination of Crustacean (H.S Code-0306)

Source: DGCI&S.

Note : India's Export including re-export

Exports of Crustaceans from India increased to US \$ 5.24 billion in 2021 from US \$ 2.38 billion in 2020. The top 5 destination of Crustacean from India are USA (US \$ 2.57 billion), China (US \$ 787.42Miillion), Japan (US \$ 351.33 Million), Vietnam (US \$ 258 Million) and U A E (US \$ 146 Million) . The total export value of Crustaceans in these countries is US \$ 4.11Billion. These top 5 countries account for over 78% of the total Crustaceans export from India. USA is the largest market for Crustaceans export from India. In 2021 USA imported US \$ 2.57billion worth Crustaceans from India. Among the top countries, USA market share of the total Crustaceans export shipments from India is 49 % of India's total export value of Crustaceans in 2021. Followed by China with the Crustaceans shipment value being US \$ 787.42 Million.

Table-2

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Rank	Countries	2017		201	8	201	9	2020	I
		Value	Share	Value	Share	Value	Share	Value	Share
		(million \$)	(%)	(million\$)	(%)	(million\$)	(%)	(million\$)	(%)
1.	India	4750.28	16.72	4482.39	15.93	4676.92	16.65	3884.30	15.51
2.	Ecuador	3052.28	10.74	3246.15	11.54	3901.56	13.89	3834.78	15.31
3.	Canada	2786.73	9.81	2791.71	9.92	3092.54	11.01	2586.67	10.33
4.	Viet Nam	2450.28	8.62	2122.95	7.55	2107.35	7.50	2258.01	9.02
5.	Russia	948.84	3.34	1185.22	4.21	1582.51	5.63	1673.67	6.68
6.	Indonesia	1689.72	5.95	1574.13	5.60	1428.66	5.09	1608.55	6.42
7.	China	1495.09	5.26	1266.26	4.50	1029.96	3.67	952.15	3.80
8.	Argentina	1222.05	4.30	1314.70	4.67	1073.46	3.82	843.44	3.37
9.	Thailand	1162.58	4.09	1062.93	3.78	995.45	3.54	781.15	3.12
10.	USA	1015.62	3.57	1081.62	3.84	938.72	3.34	754.97	3.01
	Others	7841.32	27.60	8005.14	28.45	7258.53	25.84	5866.07	23.42
	Total	28414.81	100	28133.20	100	28085.65	100	25043.77	100

World's Top 10 exporter of Crustacean (H.S Code-0306)

Source: UN Comtrade

This page contains the latest trade data of Crustaceans. In 2020, **Crustaceans** were the world's 138th most traded product, with a total trade of US \$25.04 Billion. In the year 2020 the exports of **Crustaceans** grew by -11%, from US \$28.08 B to US \$25.04 B. the trend pattern remained consistent up to the year 2019, with somewhat noticeable fluctuations being recorded over the period under review. The exports of the top major exporters of Crustaceans, namely India. India represented more than 15.5 % share of total world export of Crustacean. The Ecuador (15.31%) occupied the next position in the ranking, followed by Canada (10.33%). All these three countries together took more than 41% share of total exports of the commodity in 2020.

	world's top to importers of Crustaceun (ins Cour vevo)								
Rank	Countries	2017		2018		2019		2020	
		Value	Share	Value	Share	Value	Share	Value	Share
		(million \$)	(%)	(million\$)	(%)	(million\$)	(%)	(million\$)	(%)
1.	USA	7534.67	30.25	7337.70	27.10	7653.00	26.17	7699.96	28.64
2.	China	2512.72	10.09	4374.49	16.15	7027.30	24.03	5908.14	21.97
3.	Japan	2511.83	10.09	2343.69	8.65	2297.95	7.86	1970.02	7.33
4.	Spain	1517.70	6.09	1502.86	5.55	1420.97	4.86	1212.84	4.51
5.	Rep of Korea	1027.19	4.12	1172.08	4.33	1200.39	4.10	1137.17	4.23
6.	France	1199.13	4.81	1188.33	4.39	1074.06	3.67	1067.36	3.97
7.	Italy	797.01	3.20	859.22	3.17	771.41	2.64	652.17	2.43
8.	Canada	765.03	3.07	809.52	2.99	794.23	2.72	644.89	2.40
9.	Hong Kong	697.83	2.80	713.29	2.63	645.23	2.21	537.67	2.00
10.	Netherlands	493.82	1.98	533.50	1.97	442.88	1.51	514.89	1.92
39.	India	25.65	0.10	39.25	0.14	35.50	0.12	40.17	0.15
	Others	5823.49	23.38	6205.71	22.92	5881.64	20.11	5500.71	20.46
	Total	24906.07	100	27079.63	100	29244.57	100	26885.99	100

World's top 10 Importers of Crustacean (H.S Code-0306)

Table-3

Source : UN Comtrade

In 2020, India imported US \$ 40.17 million in Crustaceans, becoming the 39th largest importer of Crustaceans in the world. At that same year, USA was the leading Crustaceans importing country in the world, with imports valued at approximately US \$ 7.7 billion, accounted for 28.64 % of world import value of Crustaceans . The China ranked in second that year, with a import value of about US \$ 5.90 billion and Japan ranked in 3^{rd} in the world in the same year, with a import value of about US \$ 1.97 Billion.

Annexure-1

Major source countries of world's top three importers of Crustacean (H.S Code-0306)

- i) USA, being the largest importer of Crustacean in 2020, imported US \$ 2.03 billion Crustacean from India accounted for 26.36% share of USA's total import of crustacean in 2020. The 2nd and 3rd largest sources of the commodity were Canada (US \$ 1.51 B) and Indonesia (US \$ 1.01 B).
- Equador is the largest exporting country of Crustacean to China. In the year 2020 China imports US \$ 1.70 million of Crustacean form Ecuador. The import value accounted more than 28.59% of total import value of Crustacean of China comes from Ecuador in 2020. India and Canada were found 2nd and 3rd largest source of Crustacean to China.
- iii) Japan was the third largest importer of Crustacean in the world in 2020. Japan imports US \$ 1.97
 Billion worth of Crustacean from Russia in 2020 followed by Viet Nam and India with share of 16.48% and 15.46% of total import value of Crustacean to Japan in 2020.

Source : UN Comtade.

Men's or Boys Shirts, Knitted or Crocheted

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. 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.

The first documented appearance of the expression "To give the shirt off one's back", happened in 1771 as an idiom that indicates extreme desperation or generosity and is still in common usage. In 1827 Hannah Montague, a housewife in upstate New York, invents the detachable collar. Tired of constantly washing her husband's entire shirt when only the collar needed it, she cut off his collars and devised a way of attaching them to the neckband after washing. It wasn't until the 1930s that collar stays became popular, although these early accessories resembled tie clips more than the small collar stiffeners available today. They connected the collar points to the necktie, keeping them in place.

Accelerating competitive trends in the apparel business has been the gradual decline of clothing's share of total consumer spending. What limited records survive show that during the Middle Ages and Renaissance in Europe, in the heyday of the guilds, rich people spent huge proportions of their incomes on luxurious clothing for themselves. Furthermore, the nobility outfitted the various ranks in their households, even down to the lowest servant, in appropriate styles and the manor's heraldic colors for specific festivals or occasions.

In 2020, the five leading exporters of clothing were China (US \$735.01 million), India (US \$538.36 million), Viet Nam (US \$ 515.07 million), Pakistan (US \$414.84 million), and Germany (US \$402.24 million). The five largest importers of Men's shirts were USA (US \$1.43 billion), Germany (US \$561.75 billion), Japan (\$413.37 million), the U K (US \$400.57 million), and France (US\$358.94 million). France, despite the continuing prominence of Paris in the world of fashion design, had only US\$200 million in men's shirts exports in 2020.

These are broadly classified under H.S. Code-6105.

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Rank	Countries	2018	3	2019)	2020)	2021	l
		Value	Share	Value	Share	Value	Share	Value	Share
		(million\$)	(%)	(million\$)	(%)	(million\$)	(%)	(million\$)	(%)
1.	U S A	195.24	30.63	220.64	29.95	96.55	28.81	177.19	29.37
2.	UAE	155.37	24.37	173.43	23.54	72.07	21.50	124.16	20.58
3.	UK	41.02	6.44	43.87	5.95	20.96	6.25	40.42	6.70
4.	Germany	34.29	5.38	36.08	4.90	22.36	6.67	27.13	4.50
5.	France	22.19	3.48	22.83	3.10	11.54	3.44	23.40	3.88
6.	Netherland	18.85	2.96	23.02	3.12	9.88	2.95	23.30	3.86
7.	Saudi Arab	11.53	1.81	35.52	4.82	16.00	4.77	17.56	2.91
8.	Canada	14.15	2.22	12.74	1.73	6.31	1.88	13.62	2.26
9.	Poland	6.95	1.09	10.83	1.47	5.21	1.55	10.66	1.77
10.	Denmark	4.68	0.73	6.20	0.84	2.98	0.89	9.78	1.62
	Others	133.17	20.89	151.55	20.57	71.28	21.27	136.16	22.57
	Total	637.44	100	736.71	100	335.15	100	603 38	100

 Table - 4

 India's Top 10 destination of Men's or Boys Shirt (HS Code - 6105)

Source: DGCI&S

Note : India's Export including re-export

USA is the largest destination for Men's Shirt export from India. In 2021, USA imported US \$ 177.19 million worth Men's Shirt from India. Among the top countries, USA market share of the total Men's or Boys Shirt export shipments from India is 29.37% of India's total export of the commodity. Followed by United Arab Emirates and U.K. with the Men's or Boys Shirt shipment is 20.58% and 6.70% respectively in 2021. These top 3 countries account for more than 57% of the total Men's Shirt export from India. In the year 2021 India's Cotton Shirt export volume grew by 44.45% compare to that than 2020.

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Rank	Countries	2017		201	2018		9	2020	
		Value	Share	Value	Share	Value	Share	Value	Share
		(million \$)	(%)	(million\$)	(%)	(million\$)	(%)	(million\$)	(%)
1.	China	1043.62	15.04	1069.82	14.99	995.25	13.76	735.01	12.88
2.	India	745.59	10.75	636.80	8.92	736.43	10.18	538.36	9.43
3.	Viet Nam	660.25	9.52	690.29	9.67	706.63	9.77	515.07	9.03
4.	Pakistan	501.37	7.23	507.17	7.11	491.97	6.80	414.84	7.27
5.	Germany	382.90	5.52	430.88	6.04	453.80	6.27	402.24	7.05
6.	Italy	304.86	4.39	347.41	4.87	390.44	5.40	312.08	5.47
7.	Guatemala	242.00	3.49	312.14	4.37	277.71	3.84	280.65	4.92
8.	Netherlands	198.69	2.86	196.91	2.76	195.55	2.70	220.84	3.87
9.	Hong Kong	344.27	4.96	329.71	4.62	309.53	4.28	220.59	3.87
10.	France	209.18	3.02	229.58	3.22	231.67	3.20	200.32	3.51
	Others	2305.05	33.22	2386.08	33.43	2444.46	33.79	1866.03	32.70
	Total	6937.79	100	7136.79	100	7233.45	100	5706.02	100

Table - 5 World's Top 10 exporter Countries of Men's or Boys Shirt (HS Code - 6105)

Source: UN Comtrade

In 2020, the world's export of Men's or Boys Shirts with a total trade of US \$5.70 billion. That year the exports of **Men's or Boys shirts** decreased by more than 21%, from US \$ 72.33 Billion to US \$ 5.70 Billion. As leading exporter of **Men's or Boys shirts** in the world in 2020 China's Export value of **Men's or Boys shirts** was estimated at US \$735 million and accounted for 12.88% of global export value of **Men's or Boys shirts**. India, in contrast, exported a comparable US \$ 538.36 Million of **Men's or Boys shirts** in 2020 accounted 9.43% of total **Men's or Boys shirts** export value of world value n 2020 and ranked in 2ndposition in the world followed by Vietnam. The above table shows that in 2020 the top 3exporting countries together exports more than 31% of the global export value of **Men's or Boys shirts**.

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Rank	Countries	2017		201	8	201	9	2020	
		Value	Share	Value	Share	Value	Share	Value	Share
		(million \$)	(%)	(million\$)	(%)	(million\$)	(%)	(million\$)	(%)
1.	USA	2030.60	26.43	2033.71	25.39	2060.04	25.77	1431.15	23.11
2.	Germany	598.26	7.79	624.81	7.80	651.23	8.15	561.75	9.07
3.	Japan	396.17	5.16	433.96	5.42	461.00	5.77	413.37	6.67
4.	UK	546.32	7.11	557.40	6.96	532.83	6.67	400.57	6.47
5.	France	423.72	5.51	444.34	5.55	440.12	5.51	358.94	5.80
6.	Italy	338.20	4.40	389.39	4.86	349.97	4.38	272.21	4.40
7.	Spain	312.79	4.07	351.54	4.39	338.58	4.24	241.96	3.91
8.	Netherlands	196.95	2.56	212.53	2.65	242.94	3.04	224.96	3.63
9.	China	119.42	1.55	156.24	1.95	174.50	2.18	185.27	2.99
10	Hong Kong	278.62	3.63	281.66	3.52	247.27	3.09	167.77	2.71
35.	India	16.65	0.22	28.40	0.35	32.10	0.40	23.98	0.39
	Others	2426.31	31.58	2497.38	31.17	2462.08	30.80	1911.54	30.86
	Total	7683.99	100	8011.38	100	7992.67	100	6193.47	100

 Table - 6

 World's Top 10 Importer Countries of Men's or Boys Shirt (HS Code - 6105)

Source : UNComtrade

In the year 2020 the imports of **Men's or Boys shirts** decreased by more than 22%, from US \$ 7.99 billion to US \$ 6.2 billion. Imports In 2020 the top importers of **Men's or Boys shirts**were USA (US \$ 1.43B), Germany (US \$ 561.75 M) and Japan(US \$ 413.37 M. In 2020, USA was the leading **Men's or Boys shirts** importing country in the world, accounted for 23.11 % of world import value of **Men's or Boys shirts**. Germany and Japan ranked in second and third position that year, with a **Men's or Boys shirts** import value of about 9.07% and 6.67% respectively. India imports 0.39% share of world's total import value of **Men's or Boys shirts** and holds 35thposition in ranking in 2020.

Annexure-II

Major source countries of world's top three importers of Men's Shirts (HS Code - 6105)

- i) USA imports most of its Men's Shirts from USA with more than 24% of its import of Men's Shirts coming from Viet Nam. Other important source to USA were India and Jordan with share of 10% and 8.45% of the total import value of Men's Shirts into the country respectively in 2020.
- Germany, being the 2nd largest importer of Men's Shirts, imports most of the commodity from Bangladesh. nearly 31% of Men's Shirts imports of Germany was from Bangladesh in 2020. China and Turkey were other important sources of Men's Shirt in Germany. India stands at 5th rank with 7.47% share of Germany's total import of Men's Shirt in 2020.
- iii) Traditionally China exports highest amount of Men's Shirtsto Japan with more than 47.98% share of the total import value of the commodity of Japan in 2020, followed by Viet Nam and Myanmar with 27% and 6.73% shares respectively. India stands at 14th rank with 0.33% share of Japan's total import of Men's Shirt in 2020.

Source : UN Comtade

IMPORT

Safety Glass

Safety glass is glass with additional safety features that make it less likely to break, or less likely to pose a threat when broken. Common designs include toughened glass (also known as tempered glass), laminated glass, and wire mesh glass (also known as wired glass). Wire mesh glass was invented by Frank Shuman.^{[1][2]} Laminated glass was invented in 1903 by the French chemist ÉdouardBénédictus (1878–1930).

These three approaches can easily be combined, allowing for the creation of glass that is at the same time toughened, laminated, and contains a wire mesh. However, combination of a wire mesh with other techniques is unusual, as it typically betrays their individual qualities. In many developed countries safety glass is part of the building regulations making properties safer.

Toughened glass is processed by controlled thermal or chemical treatments to increase its strength compared with normal glass. Tempering, by design, creates balanced internal stresses which causes the glass sheet, when broken, to crumble into small granular chunks of similar size and shape instead of splintering into random, jagged shards. The granular chunks are less likely to cause injury. As a result of its safety and strength, tempered glass is used in a variety of demanding applications, including passenger vehicle windows, shower doors, architectural glass doors and tables, refrigerator trays, as a component of bulletproof glass, for diving masks, and various types of plates and cookware. In the United States, since 1977 Federal law has required safety glass located within doors and tub and shower enclosures.

Laminated glass is composed of layers of glass and plastic held together by an interlayer. When laminated glass is broken, it is held in place by an interlayer, typically of polyvinyl butyral (PVB), between its two or more layers of glass, which crumble into small pieces. The interlayer keeps the layers of glass bonded even when broken, and its toughening prevents the glass from breaking up into large sharp pieces. This produces a characteristic "spider web" cracking pattern (radial and concentric cracks) when the impact is not enough to completely pierce the glass.

Wire mesh glass (also known as Georgian Wired Glass) has a grid or mesh of thin metal wire embedded within the glass. Wired glass is used in the US for its fire-resistant abilities, and is well-rated to withstand both heat and hose streams. This is why wired glass exclusively is used on service elevators to prevent fire ingress to the shaft, and also why it is commonly found in institutional settings which are often well-protected and partitioned against fire. The wire prevents the glass from falling out of the frame even if it cracks under thermal stress, and is far more heat-resistant than a laminating material.

Wired glass, as it is typically described, does not perform the function most individuals associate with it. The presence of the wire mesh appears to be a strengthening component, as it is metallic, and conjures up the idea of rebar in reinforced concrete or other such examples. Despite this belief, wired glass is actually weaker than unwired glass due to the incursions of the wire into the structure of the glass. Wired glass often may cause heightened injury in comparison to unwired glass, as the wire amplifies the irregularity of any fractures. This has led to a decline in its use institutionally, particularly in schools.

In 2019, **Safety Glass**ware the world's 300th most traded product, with a total trade of \$11B. Trade in **Safety Glass** represent 0.061% of total world trade.

Safety Glass are a part of Glass and glassware. They include Safety glass (laminated) for vehicles, aircraft, etc, Safety glass (tempered) for vehicles, aircraft, etc, Safety glass, toughened (tempered), non-vehicle use, and Safety glass, laminated, non vehicle use.

These are broadly classified under H. S. Code 7007.

India's Top 10 Sources of Safety Glass (HS Code 7007)

Rank	Countries	2018		2019)	2020)	2021	
		Value	Share	Value	Share	Value	Share	Value	Share
		(million \$)	(%)	(million\$)	(%)	(million\$)	(%)	(million\$)	(%)
1.	China	86.79	62.45	81.20	52.56	34.16	40.49	92.88	39.86
2.	Malaysia	22.74	16.36	48.29	31.26	37.26	44.17	79.34	34.05
3.	Vietnam	0.05	0.04	0.03	0.02	0.07	0.08	33.67	14.45
4.	Germany	8.76	6.30	6.40	4.14	2.43	2.88	6.74	2.89
5.	U S A	2.84	2.04	2.16	1.40	1.00	1.19	2.86	1.23
6.	Netherland	0.19	0.14	0.12	0.08	0.04	0.05	2.67	1.15
7.	Korea RP	1.73	1.24	2.73	1.77	2.81	3.33	2.67	1.15
8.	Hong Kong	1.33	0.96	0.89	0.58	0.71	0.84	1.97	0.85
9.	Thailand	2.45	1.76	2.58	1.67	0.19	0.23	1.82	0.78
10.	UK	4.03	2.90	2.08	1.35	0.97	1.15	1.59	0.68
	Others	8.05	5.79	8.00	5.18	4.72	5.60	6.78	2.91
	Total	138.97	100	154.48	100	84.36	100	232.99	100

Source: DGCI&S

Note : India's Import including re-import

Among the top importing countries, India imported the highest dollar worth of Safety Glass from China with shipments in 2021 valued at US \$ 92.88 Million which is greater than the previous year. In second place and third place were Malaysia and Vietnam, from which India imported around Us \$ 79.34 Million and US \$ 33.67 Million worth of Safety Glass. The top 10 countries shared 97.09% of the Safety Glass import to India in 2021.

Rank	Countries	2017	1	2018	`	2019		2020	
		Value	Share	Value	Share	Value	Share	Value	Share
		(million \$)	(%)	(million\$)	(%)	(million\$)	(%)	(million\$)	(%)
1.	Germany	1375.65	12.91	1454.28	12.87	1318.07	12.09	1149.37	11.32
2.	USA	1020.69	9.58	1178.77	10.43	1155.19	10.60	954.91	9.41
3.	Viet Nam	236.80	2.22	263.88	2.33	493.89	4.53	738.08	7.27
4.	France	672.87	6.32	739.90	6.55	665.69	6.11	547.95	5.40
5.	Belgium	486.00	4.56	512.04	4.53	486.11	4.46	481.88	4.75
6.	Canada	505.78	4.75	502.91	4.45	468.94	4.30	413.18	4.07
7.	UK	608.74	5.71	621.19	5.50	510.98	4.69	412.55	4.06
8.	Rep of Korea	426.95	4.01	315.78	2.79	326.70	3.00	372.35	3.67
9.	Spain	280.94	2.64	315.21	2.79	299.61	2.75	275.36	2.71
10.	Italy	246.11	2.31	277.77	2.46	272.10	2.50	243.20	2.40
25.	India	109.42	1.03	138.87	1.23	154.43	1.42	136.42	1.34
	Others	4684.45	43.97	4982.90	44.08	4749.48	43.57	4425.96	43.60
	Total	10654.39	100	11303.49	100	10901.18	100	10151.19	100

World Top 10 Importer of Safety Glass (HS Code 7007)

Source :UNComtrade

Germany boosted safety glass buyers abroad imports US \$ 1.15 billion in 2020 and from \$1.3B to \$1.1B, topping the global importer ranking in 2020 along with the U.S.A and Vietnam. In value terms, the largest Safety Glass importing markets worldwide were Germany (US \$1.15 B), the U.S. (US \$955M) and Viet Nam (US \$738M), together comprising 28% of global imports of Safety Glass in 2020.The value of Safety Toughened Glass import from India in 2020 is US \$ 136.42 million in 2020 and ranked in 25th position in the world in 2020.

Self Adhesive Materials of Plastics

Self-adhesive plastic sheet, known in the United Kingdom as **sticky-backed plastic**, is wide plastic sheet or film with an adhesive layer on one side, used as a surface coating for decorative purposes. It is typically smooth and shiny, but can also come in textured varieties, in which case it can sometimes be used as a cheap alternative to veneer. The plastic is often PVC. The sheeting is typically sold with a removable paper release liner to prevent it from adhering prematurely.

Self-adhesive vinyl sheet was introduced to the UK market in the 1960s under the brand name Fablon. It was extensively used in DIY at the time, and notably featured in children's DIY projects on the British TV show Blue Peter, but always under the generic name "sticky-backed plastic.

Smooth self-adhesive plastic sheet is typically used to cover the studio floor for shiny-floor shows, thus giving them their name.

Pressure-sensitive tape, known also in various countries as PSA tape, adhesive tape, self-stick tape, sticky tape, Sellotape, or just tape, is an adhesive tape that will stick with application of pressure, without the need for a solvent (such as water) or heat for activation. It can be used in the home, office, industry, and institutions for a wide variety of purposes.

The tape consists of a pressure-sensitive adhesive coated onto a backing material such as paper, plastic film, cloth, or metal foil. Some have a removable release liner which protects the adhesive until the liner is removed. Some have layers of adhesives, primers, release agents, filaments, printing, etc. made for specific functions.

It will stick without the need for a solvent such as water or heat for activation. By contrast, "gummed" or "water activated" adhesive tapes require warm water for activation and "heat activated" tapes require heat.

Single-sided tapes allow bonding to a surface or joining of two adjacent or overlapping materials. Double-sided tape (adhesive on both sides) allows joining of two items back-to-back.

Pressure-sensitive adhesive was first developed in 1845 by Dr. Horace Day, a surgeon.Commercial tapes were introduced in the early twentieth century. Hundreds of patents have since been published on a wide variety of formulations and constructions.

Adhesive transfer tape does not have a backing material. Instead, adhesive is on a double-coated release liner for winding on a roll. Sometimes the adhesive is sandwiched between two liners. Archival tape is similar to transparent office tape, with low-acid adhesives that will not degrade surfaces they are applied to, protecting documents from damage during long-term storage. Archival tape is similar to transparent office tape, with low-acid adhesives that will not degrade surfaces they are applied to, protecting documents from damage during long-term storage. Transparent office tape is used for repairing torn paper products, sealing envelopes, general holding, etc. It is a transparent film of cellophane, cellulose, polypropylene, or other plastic, with an acrylic or synthetic rubber–based adhesive. Clear tape with a matte finish is branded "Scotch Magic Tape" or called "invisible tape". Clear tape is sold in pre-filled single-use tape dispensers and in "refill" rolls for permanent desktop tape dispensers. Famous brands include Sellotape, Scotch Tape, Duck, Tesa, LePage's, Texcel, etc.

The Global import value of self adhesive plastic was US \$ 21.33 in 2020. The impact of Covid-19 has been unprecedented and staggering, with self adhesive plastic witnessing a negative demand shock across all regions amid the pandemic. The global import of the commodity exhibited a decline of 1.57% in 2020 as compared to the average year-on year growth during 2017-2019.

These are broadly classified under H. S. Code 3919.

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Rank	Countries	2018		2019)	2020)	2021	l
		Value	Share	Value	Share	Value	Share	Value	Share
		(million \$)	(%)	(million\$)	(%)	(million\$)	(%)	(million\$)	(%)
1.	China	129.74	30.91	142.73	31.48	70.20	33.33	176.45	38.08
2.	Korea RP	47.76	11.38	62.36	13.75	26.99	12.81	46.94	10.13
3.	Viet Nam	36.86	8.78	47.54	10.49	11.87	5.64	38.59	8.33
4.	USA	49.01	11.68	45.31	9.99	19.42	9.22	36.01	7.77
5.	Japan	29.27	6.97	25.98	5.73	12.49	5.93	26.95	5.82
6.	Singapore	20.98	5.00	20.14	4.44	8.79	4.17	23.99	5.18
7.	Germany	19.62	4.67	17.93	3.95	9.33	4.43	22.17	4.79
8.	Hong Kong	9.34	2.23	21.14	4.66	15.66	7.43	20.59	4.44
9.	Taiwan	11.26	2.68	9.36	2.06	4.46	2.12	11.41	2.46
10.	Thailand	12.90	3.07	8.41	1.85	5.48	2.60	10.03	2.16
	Others	52.97	12.62	52.49	11.58	25.93	12.31	50.18	10.83
	Total	419.72	100	453.40	100	210.61	100	463.30	100

 Table - 9

 India's Top 10 Sources ofSelf Adhesive PlasticsMaterials(HS Code : 3919)

Source: DGCI&S

Note : India's Import including Re-import

The above data indicates that India's import of self Adhesive Plastics Materials has grown toUS \$ 463.30 million in 2021 from US \$ 210.61 million in 2020, which shows a growth of 54.54% from the previous year's import i.e. in 2020. In the year 2021 India's major sources of Self Adhesive Plastic Materials are China (US \$ 176.45 Million), Rep. of Korea (US \$ 46.94 Million), Viet Nam (Us \$ 38.59 Million), USA (US \$ 36.01Million) and Japan (US \$ 26.95 Million). These 5 countries in total sold US \$ 325 Million value of Self Adhesive Plastic import into India Which shows more 70% of total world import value of Self Adhesive Plastic imported by India from these 5 countries in 2021.

Table	e - 10
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Rank Countries 20172018 2019 2020 Value Share Value Share Value Share Value Share (million\$) (%) (million\$) (%) (million\$) (%) (million\$) (%) China 2744.85 12.93 2836.49 12.73 2794.36 2889.25 13.54 1. 13.00 1172.23 1339.54 2. USA 5.52 6.01 1353.89 6.30 1363.84 6.39 3. 1220.55 1297.08 5.82 1260.72 5.86 1258.39 5.90 Germany 5.75 4. Mexico 1197.11 5.64 1272.65 5.71 1269.02 5.90 1136.64 5.33 5. Viet Nam 1137.76 5.36 1162.17 5.22 984.31 4.58 1094.39 5.13 726.76 807.95 787.09 747.21 6. France 3.42 3.63 3.66 3.50 7. Hong Kong 820.44 3.86 814.62 790.62 3.68 3.03 3.66 645.38 8. UΚ 669.93 3.16 640.41 2.87 653.32 3.04 615.10 2.88 9. Canada 569.21 2.68 590.24 2.65 576.53 2.68 572.68 2.68 10. Poland 418.19 1.97 474.01 2.13 169.63 0.79 549.46 2.58 19. India 327.92 1.54 420.57 1.89 453.68 2.11 348.70 1.63 Others 10226.59 48.17 10627.60 47.69 10406.33 48.40 10110.72 47.40 21499.50 100 21331.75 Total 21231.53 100 22283.32 100

World Top 10 Importer of Self Adhesive Materials of Plastics (HS Code :3919)

Source :UNComtrade

China has become the world's largest importer among world's largest importers. Imports 13.54% share of world's import of Self Adhesive materials of Plastic in 2020 followed by USA and Germany. India's imports of Self Adhesive materials of Plastics have hit an all-time high and its share in the world-wide export market of this product was 1.63 % of total world import trade value of Self Adhesive materials of Plastics and ranked in 19th position in the world.