CHEMICAL INDUSTRY OF JAPAN 2025

Japan's chemical industry viewed by figures and graphs

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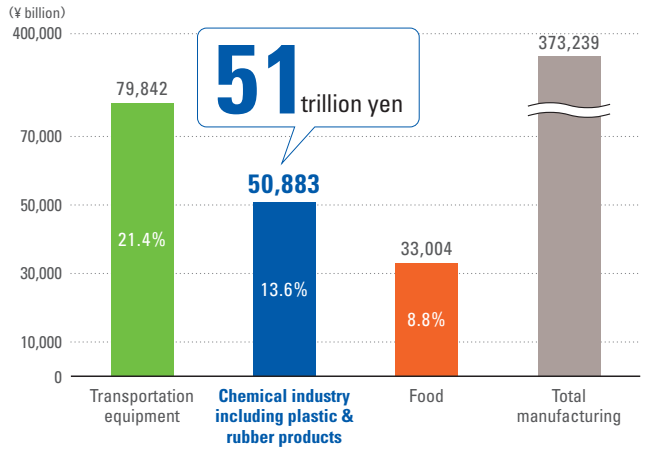
Value of shipments (2023)

Source : METI [Annual Business Survey]※



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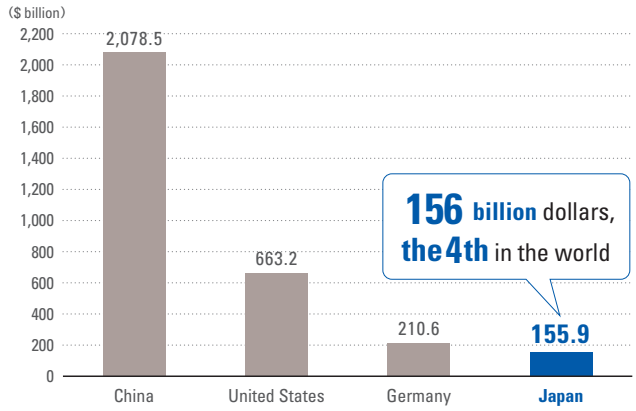
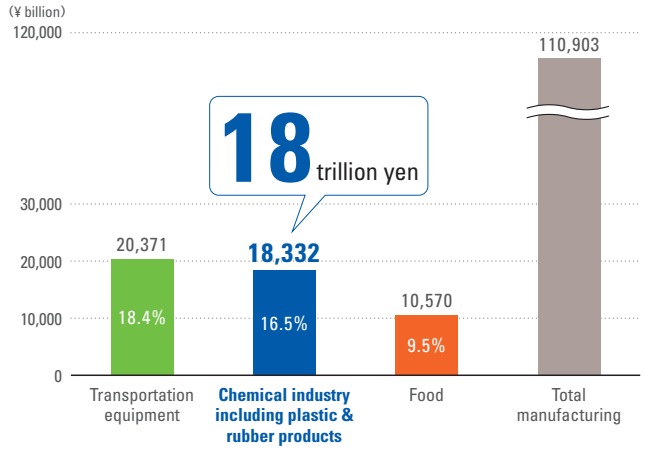
Shipments by country/region (2023)

Source : American Chemistry Council



Amount of value added (2023)

Source : METI [Annual Business Survey]※



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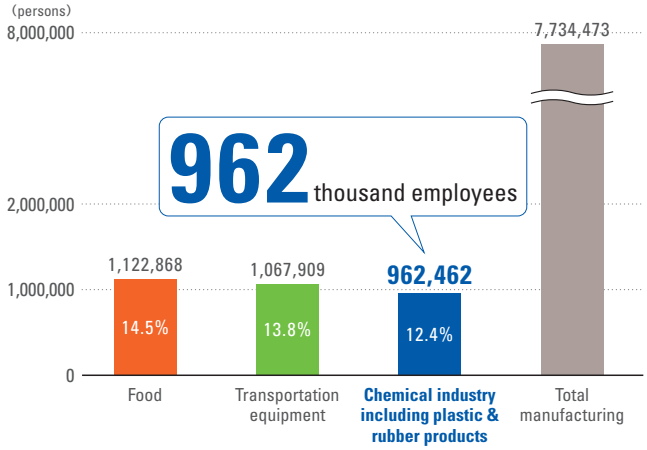
Number of employees (2023)

Source : METI [Annual Business Survey]※



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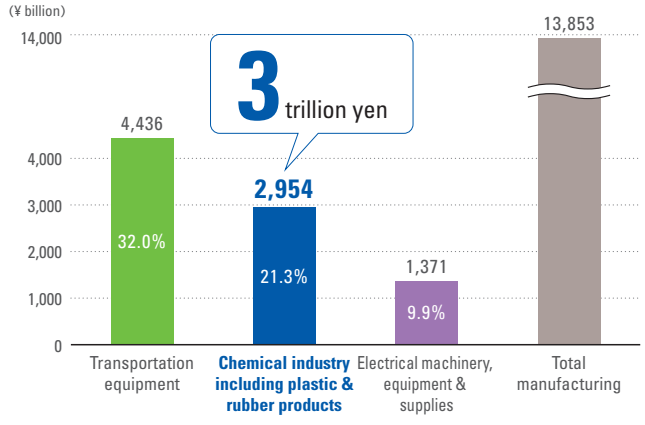
R&D expenditures (2023)

Source: MIC [Survey of Research and Development]



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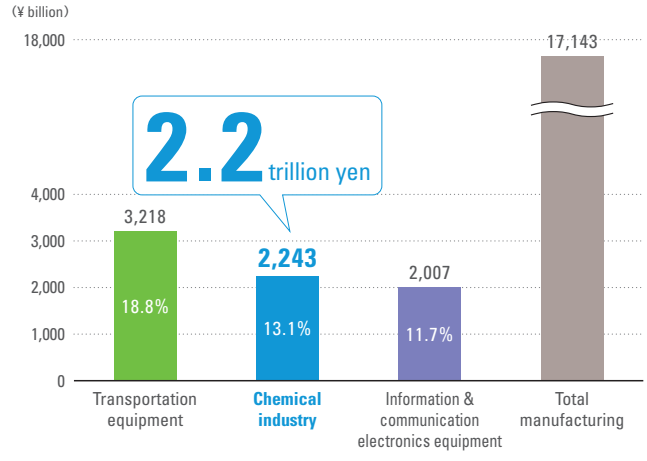
Capital investment (2024)

Source: MOF [Financial Statements Statistics of Corporations by Industry]



Japan's chemical industry supports people's lives and other industries

Japan's chemical industry supports innovation across entire industries by supplying materials which offer a wide range of functionality as basic ingredients for many different types of industry. The products which are then generated bring about improvements in people's lives in every realm, the purification of water and the environment, better utilization of renewable energy, energy saving and resource saving, development of an information-based society, the advancement of medical care, a stable food supply, and the recycling of waste. They also make a significant contribution in terms of sustainable development. Such a diversified contribution is a distinctive feature of the chemical industry, one that is never seen in other industries, and one that demonstrates the infinite potential of chemistry.

The total shipments and amount of value added of "chemical industry including plastic and rubber products" amounted to Yen 51 trillion and Yen 18 trillion, respectively, in 2023, ranking those as the second and first scales in the manufacturing industry. The number of employees is about 960,000. Thus, the industry significantly supports the people's lives also in employment. Although it may be difficult for people to understand overall chemical industry because it manufactures diverse products*, we introduce the industry with data and graphs in this "Chemical Industry of Japan".

*Since the chemical industry is vast, with wide range and scope of work, content may vary depending on different classifications. Therefore, in this brochure, we have conformed to Japan Standard Industrial Classification (major group: manufacture of chemical and allied products). Detail of content is described on Page 5. When the standard differs, we have provided footnotes.

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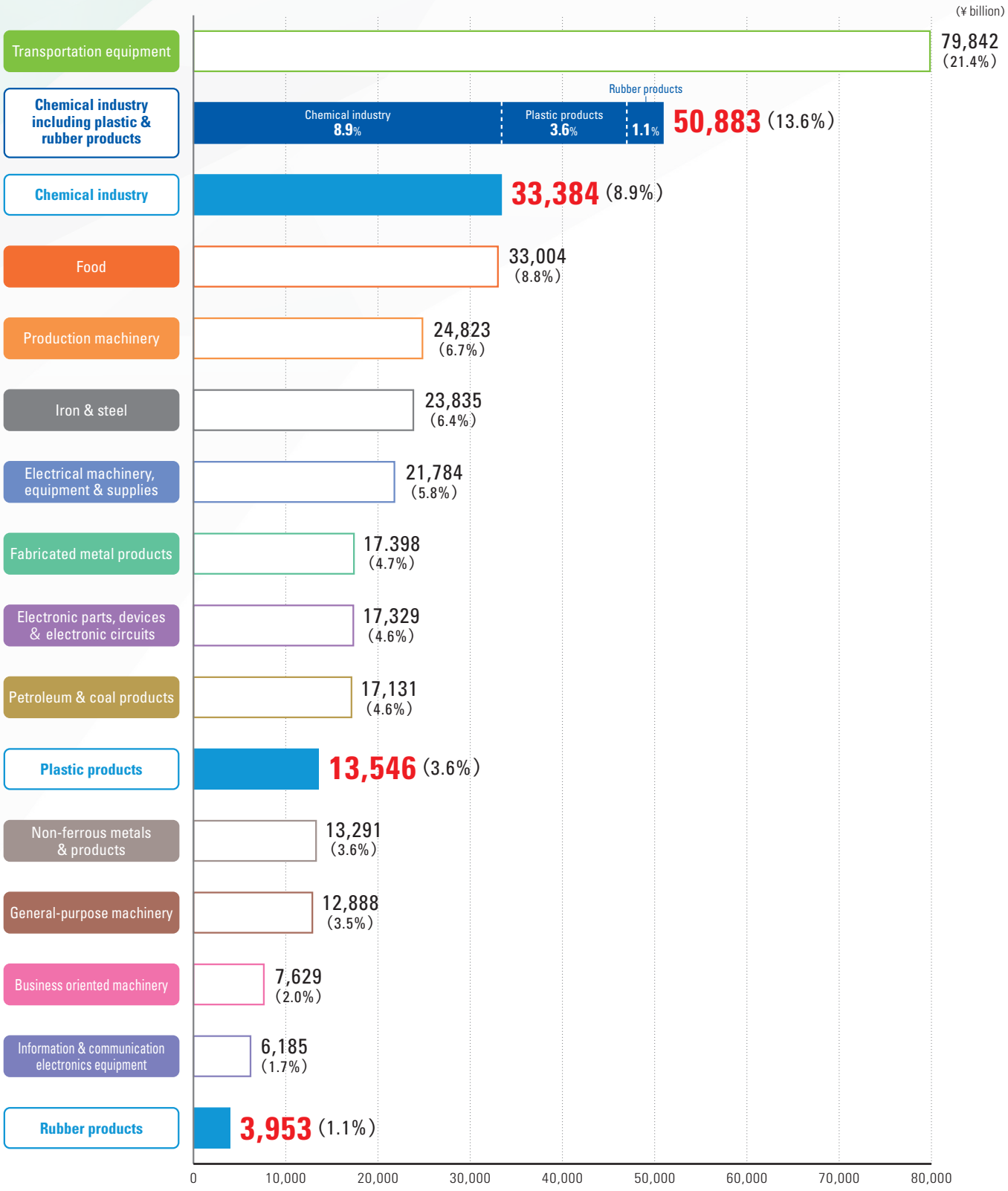
1 Shipments

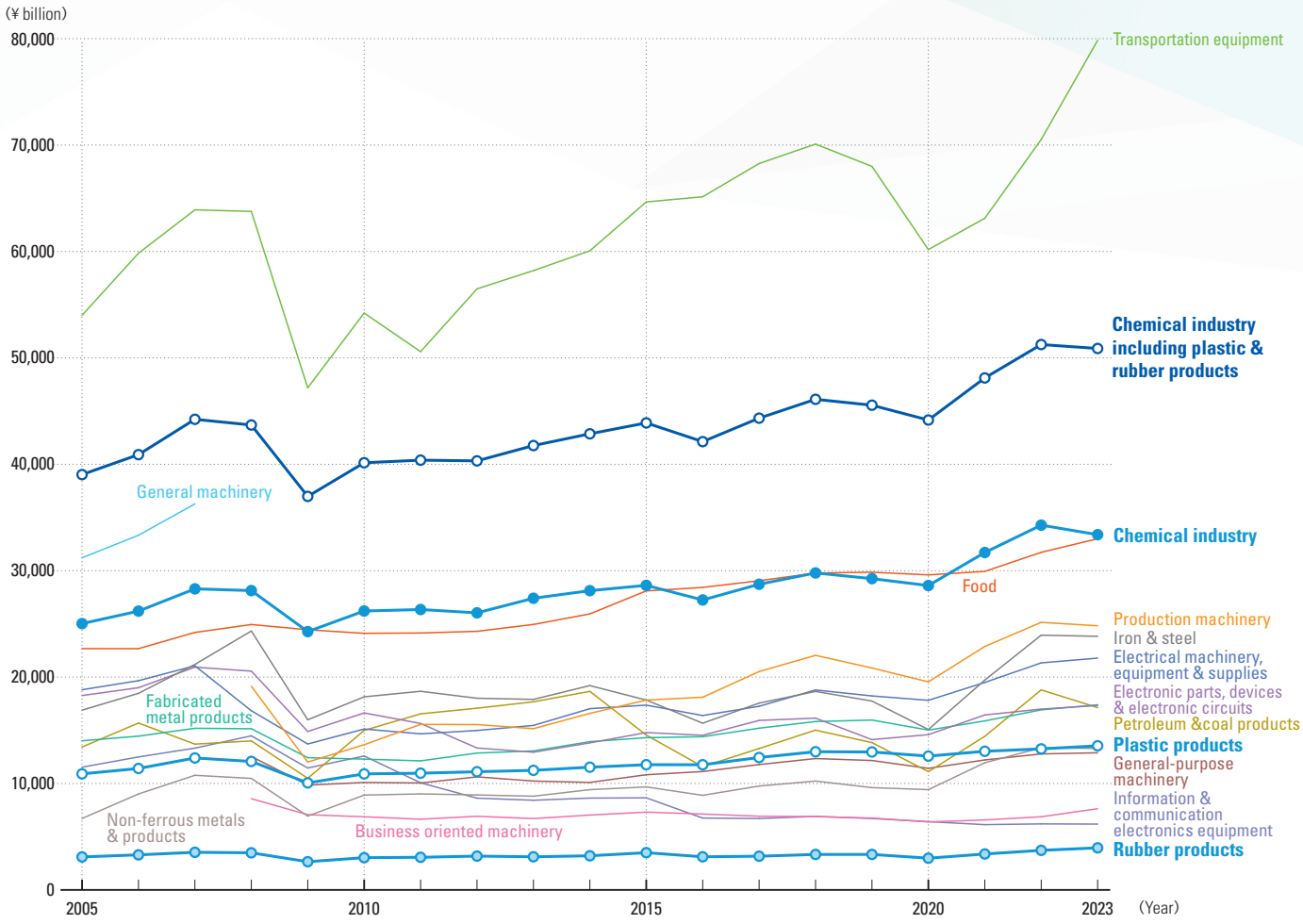
Total shipment value of chemical industry ranks 2nd in manufacturing industries amounting to 51 trillion yen.

Value of shipments by manufacturing industry in 2023



(Source) Ministry of Economy, Trade and Industry [Annual Business Survey (Survey of Manufacturing Establishments)]

Trend in shipment value (2005-2023)



(¥ billion)

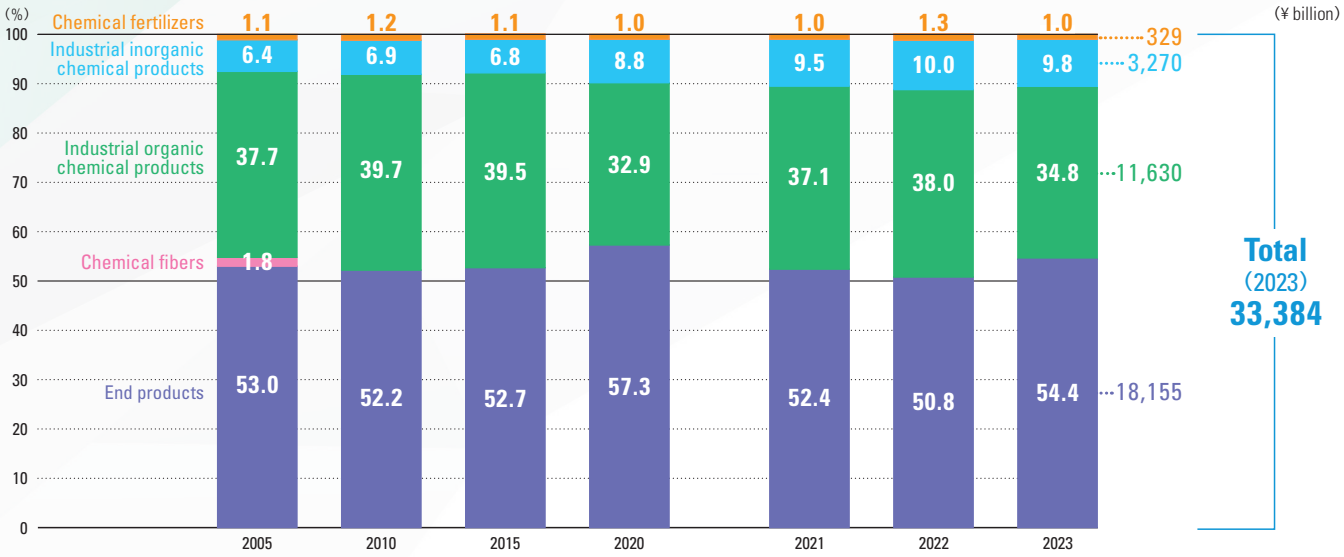
Industry \ Year	Every 5th year				Recent three years			
	2005	2010	2015	2020	2021	2022	2023	
Chemical industry	25,027	26,212	28,622	28,603	31,708	34,281	33,384	8.9%
Plastic products	10,906	10,903	11,767	12,574	13,030	13,253	13,546	3.6%
Rubber products	3,099	3,029	3,499	2,982	3,376	3,719	3,953	1.1%
Chemical industry including plastic & rubber products	**39,032**	**40,144**	**43,889**	**44,159**	**48,114**	**51,253**	**50,883**	**13.6%**
Food	22,678	24,114	28,102	29,606	29,935	31,726	33,004	8.8%
Petroleum & coal products	13,429	14,992	14,555	11,114	14,433	18,799	17,131	4.6%
Iron & steel	16,896	18,146	17,842	15,072	19,719	23,941	23,835	6.4%
Non-ferrous metals & products	6,712	8,911	9,680	9,424	11,951	13,359	13,291	3.6%
Fabricated metal products	14,016	12,292	14,306	15,020	15,881	16,920	17,398	4.7%
General machinery	31,211	–	–	–	–	–	–	–
General-purpose machinery	–	10,100	10,823	11,424	12,215	12,781	12,888	3.5%
Production machinery	–	13,646	17,837	19,554	22,879	25,147	24,823	6.7%
Business oriented machinery	–	6,873	7,311	6,387	6,577	6,873	7,629	2.0%
Electronic parts, devices & electronic circuits	18,265	16,633	14,788	14,593	16,442	16,995	17,329	4.6%
Electrical machinery, equipment & supplies	18,812	15,120	17,366	17,819	19,499	21,337	21,784	5.8%
Information & communication electronics equipment	11,534	12,585	8,652	6,417	6,135	6,205	6,185	1.7%
Transportation equipment	54,000	54,214	64,654	60,178	63,120	70,528	79,842	21.4%
Others	48,760	41,338	43,324	41,236	43,320	45,909	47,216	12.7%
Total manufacturing	295,346	289,108	313,129	302,003	330,220	361,775	373,239	100.0%

(Source) Since 2021, Ministry of Economy, Trade and Industry [Annual Business Survey (Survey of Manufacturing Establishments)]
(Note) Electrical machinery was divided into electronic parts & devices, electrical machinery, and information & communication electronics equipment in 2002.
General machinery was divided into general-purpose machinery, production machinery, and business oriented machinery in 2008.
Electronic circuits have been added to electronic parts & devices since 2011.

2 Shipment by products/Major indices

Chemical products meet the needs of various fields.

Trend of shipments composition in chemical industry (2005-2023)

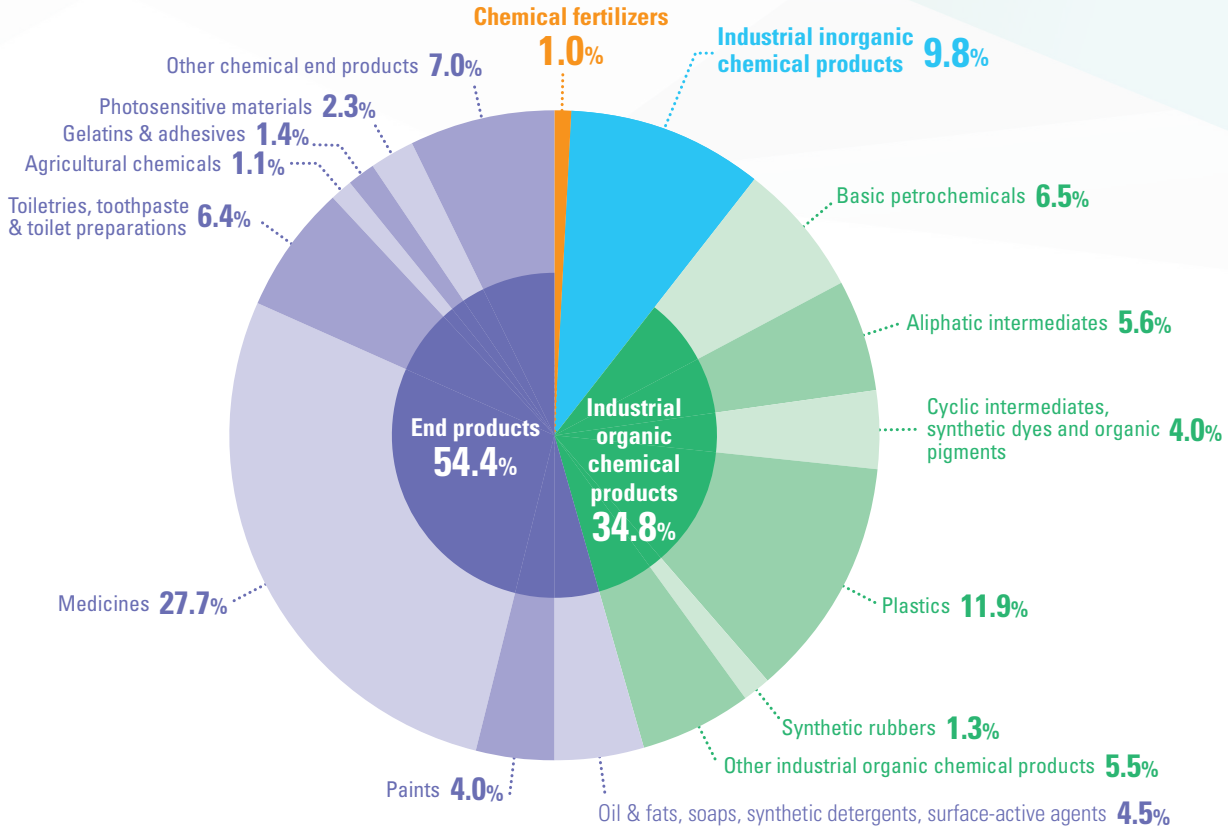


(%)

Industry \ Year	Every 5th year				Recent three years		
	2005	2010	2015	2020	2021	2022	2023
Chemical fertilizers	1.1	1.2	1.1	1.0	1.0	1.3	1.0
Industrial inorganic chemical products	6.4	6.9	6.8	8.8	9.5	10.0	9.8
Industrial organic chemical products	37.7	39.7	39.5	32.9	37.1	38.0	34.8
▶Basic petrochemicals	6.3	6.6	5.9	5.6	6.7	5.6	6.5
▶Aliphatic intermediates	6.1	5.9	5.4	4.8	6.0	7.6	5.6
▶Cyclic intermediates, synthetic dyes and organic pigments	7.6	6.8	7.4	3.5	4.5	4.5	4.0
▶Plastics	11.0	13.2	12.8	11.3	11.9	12.6	11.9
▶Synthetic rubbers	2.0	1.6	1.9	1.4	1.4	1.3	1.3
▶Other industrial organic chemical products	4.7	5.5	6.0	6.3	6.7	6.3	5.5
Chemical fibers	1.8	–	–	–	–	–	–
End products	53.0	52.2	52.7	57.3	52.4	50.8	54.4
▶Oil & fats, soaps, synthetic detergents, surface-active agents	4.1	4.2	3.9	4.5	4.3	4.4	4.5
▶Paints	3.7	4.0	3.5	3.5	3.7	3.7	4.0
▶Medicines	28.0	28.1	29.2	31.0	27.7	26.2	27.7
▶Toiletries, toothpaste & toilet preparations	5.6	5.3	5.4	7.3	6.7	6.0	6.4
▶Agricultural chemicals	1.1	1.0	1.2	1.3	1.3	1.2	1.1
▶Gelatins & adhesives	1.0	1.2	1.2	1.4	1.4	1.3	1.4
▶Photosensitive materials	2.5	1.7	1.2	1.0	1.0	1.6	2.3
▶Other chemical end products	7.0	6.8	7.2	7.3	6.3	6.4	7.0
Chemical industry	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Chemical industry	64.1	65.3	65.2	64.8	65.9	66.9	65.6
Plastic products	27.9	27.2	26.8	28.5	27.1	25.9	26.6
Rubber products	7.9	7.5	8.0	6.8	7.0	7.3	7.8
Chemical industry including plastic & rubber products	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(Source) Since 2021, Ministry of Economy, Trade and Industry [Annual Business Survey (Survey of Manufacturing Establishments)]
(Note) Chemical fibers have been moved to textile industry since 2008.

Composition of chemical products shipped in 2023



(Source) Ministry of Economy, Trade and Industry [Annual Business Survey (Excludes private management)]

Major chemical industry indices with breakdown by product in 2023

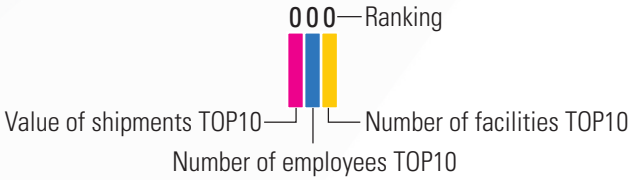
Industry	Major indices, Composition							
	Number of facilities		Number of employees		Value of shipments		Amount of value added	
		%	(Persons)	%	(¥ billion)	%	(¥ billion)	%
Chemical fertilizers	214	3.8	4,385	1.1	329	1.0	56	0.5
Industrial inorganic chemical products	992	17.6	37,978	9.5	3,270	9.8	855	7.1
Industrial organic chemical products	855	15.2	101,672	25.5	11,630	34.8	2,789	23.3
▶Basic petrochemicals	9	0.2	4,862	1.2	2,169	6.5	334	2.8
▶Aliphatic intermediates	72	1.3	12,402	3.1	1,873	5.6	516	4.3
▶Cyclic intermediates, synthetic dyes and organic pigments	129	2.3	13,376	3.4	1,350	4.0	254	2.1
▶Plastics	280	5.0	38,725	9.7	3,957	11.9	984	8.2
▶Synthetic rubbers	18	0.3	5,110	1.3	448	1.3	109	0.9
▶Other industrial organic chemical products	347	6.2	27,197	6.8	1,833	5.5	593	5.0
End products	3,580	63.5	254,005	63.8	18,155	54.4	8,271	69.1
▶Oil & fats, soaps, synthetic detergents, surface-active agents	348	6.2	17,329	4.4	1,503	4.5	625	5.2
▶Paints	462	8.2	17,483	4.4	1,335	4.0	529	4.4
▶Medicines	800	14.2	106,944	26.9	9,256	27.7	4,622	38.6
▶Toiletries, toothpaste & toilet preparations	689	12.2	48,178	12.1	2,135	6.4	1,120	9.4
▶Agricultural chemicals	91	1.6	5,187	1.3	365	1.1	144	1.2
▶Gelatins & adhesives	150	2.7	6,660	1.7	465	1.4	151	1.3
▶Photosensitive materials	40	0.7	9,419	2.4	752	2.3	338	2.8
▶Other chemical end products	1,000	17.7	42,805	10.8	2,344	7.0	742	6.2
Chemical industry	5,641	100.0	398,040	100.0	33,384	100.0	11,971	100.0
Chemical industry	5,641	25.9	398,040	41.4	33,384	65.6	11,971	65.3
Plastic products	13,745	63.1	449,253	46.7	13,546	26.6	4,897	26.7
Rubber products	2,380	10.9	115,169	12.0	3,953	7.8	1,464	8.0
Chemical industry including plastic & rubber products	21,766	100.0	962,462	100.0	50,883	100.0	18,332	100.0

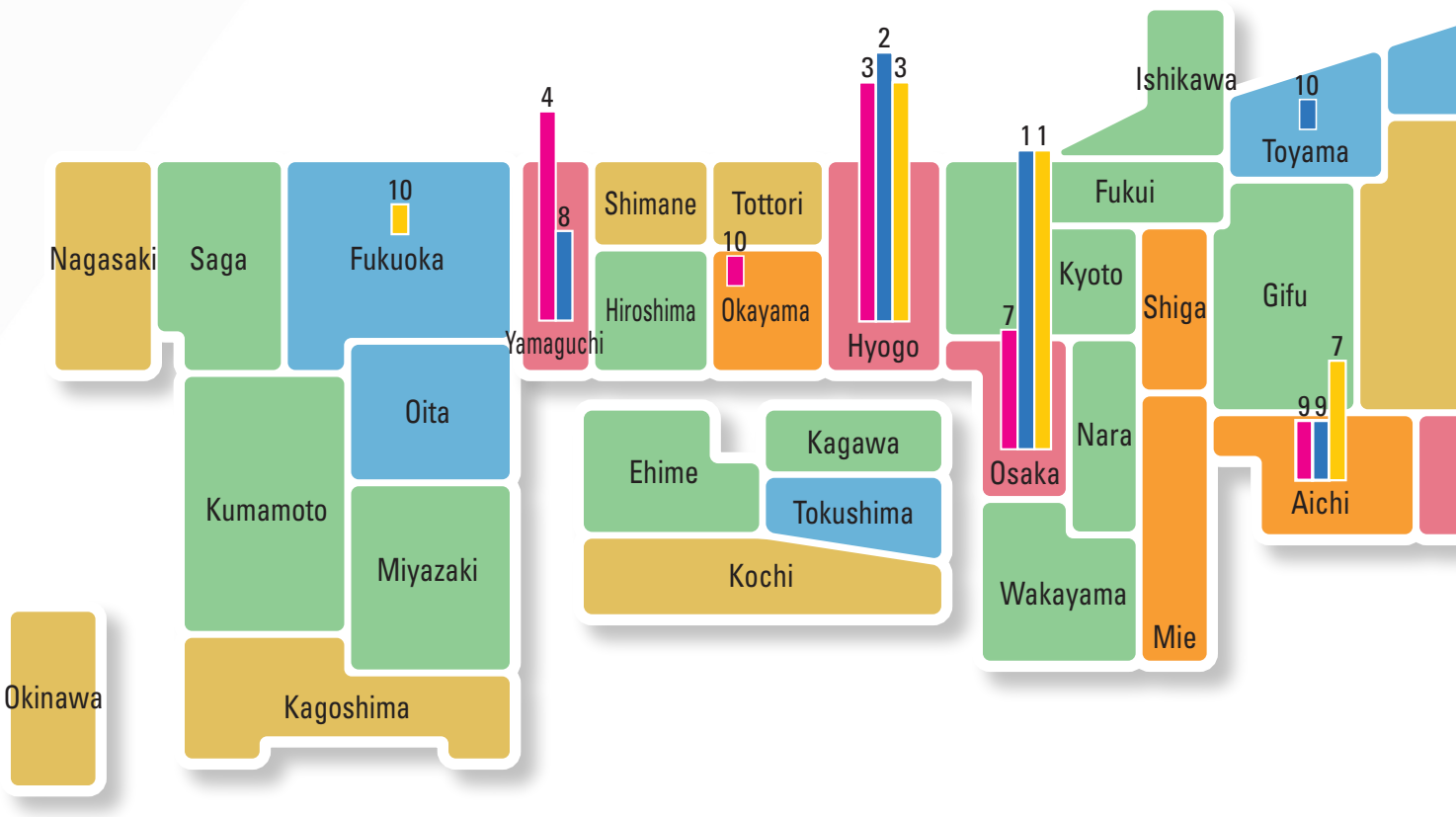
(Source) Ministry of Economy, Trade and Industry [Annual Business Survey (Survey of Manufacturing Establishments)]

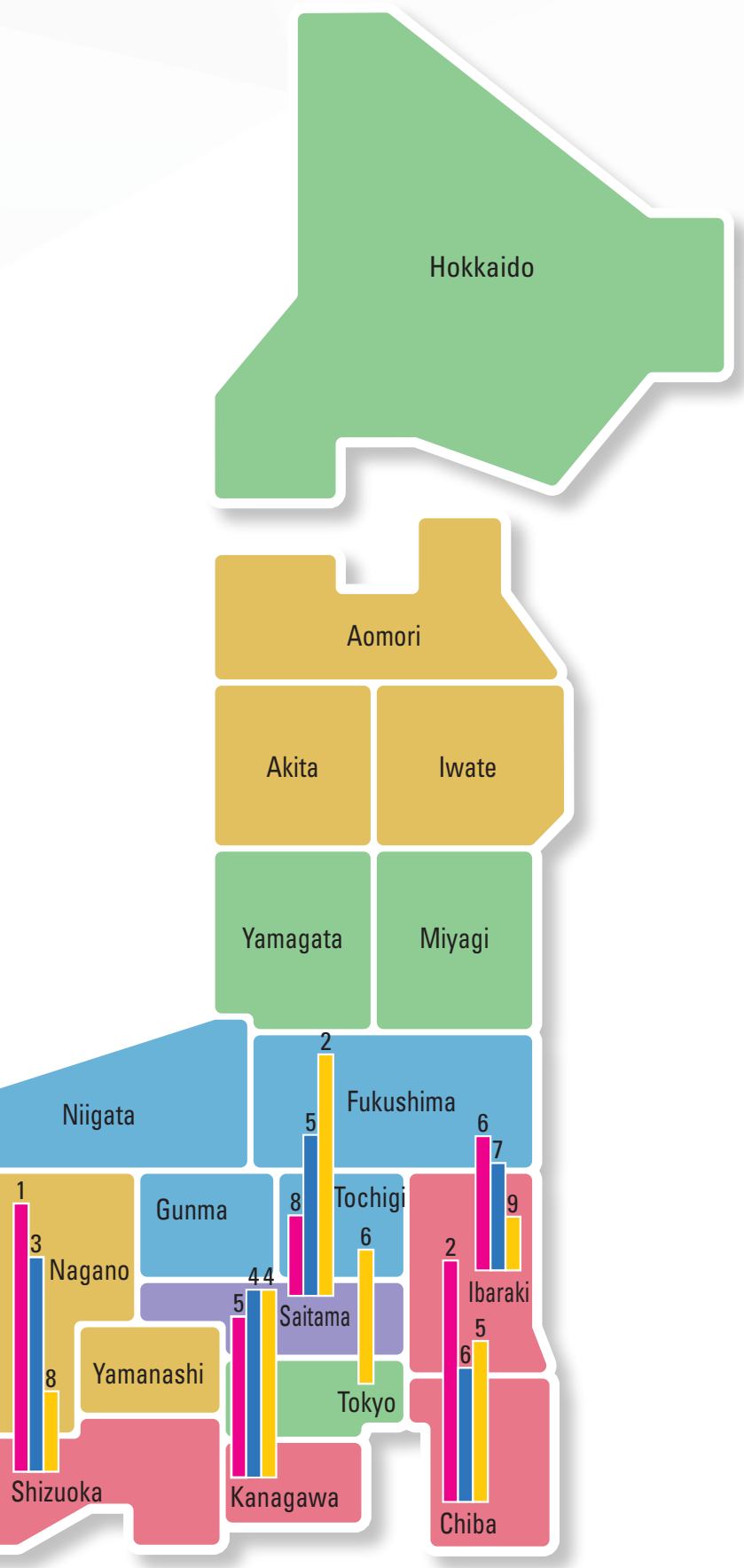
3 Shipment, number of employed workers and number of facilities by prefecture

Shipment, number of employed workers and number of facilities by prefecture in 2023

- Over ¥2 trillion
- ¥1.5 trillion - ¥2 trillion
- ¥1 trillion - ¥1.5 trillion
- ¥500 billion - ¥1 trillion
- ¥100 billion - ¥500 billion
- Less than ¥100 billion







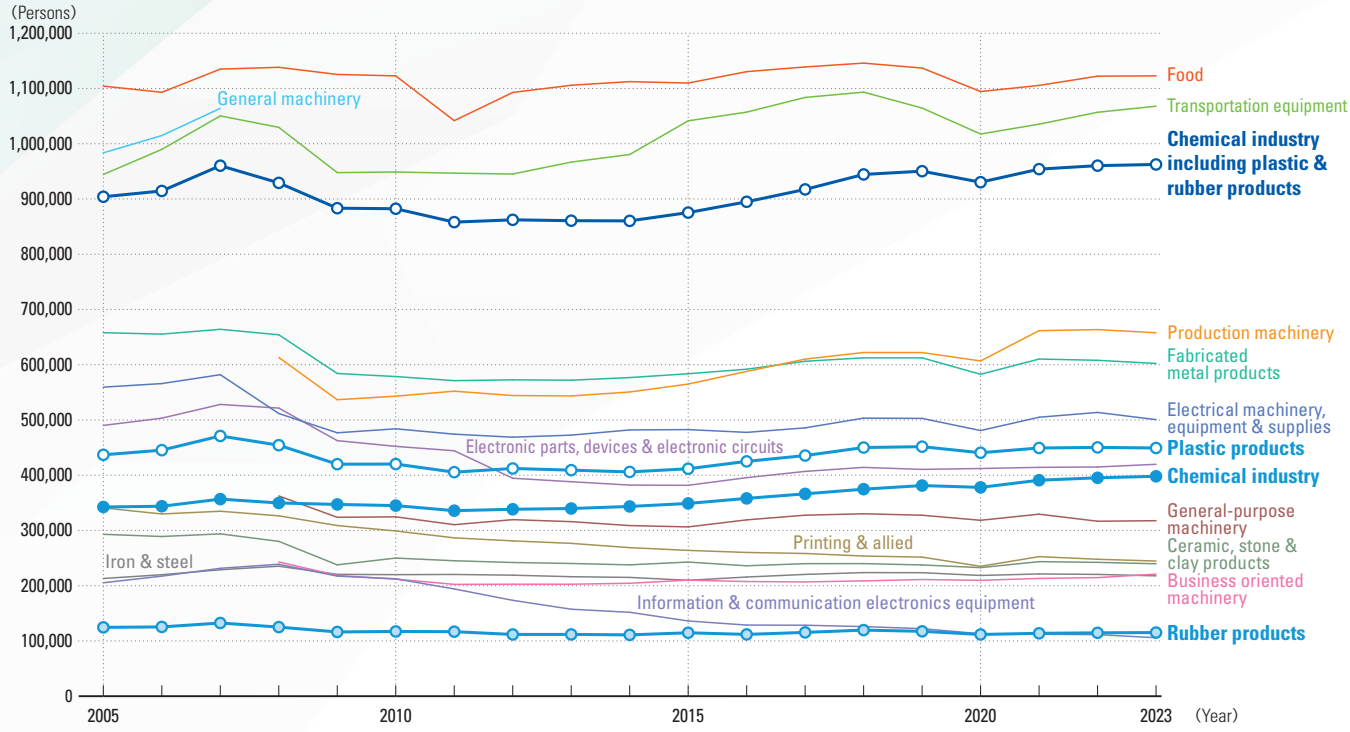
	Prefecture	Value of shipments (¥100million)	Change from 2022	Number of employees	Number of facilities
1	Shizuoka	25,724	99.9%	25,017	234
2	Chiba	25,532	92.4%	22,513	293
3	Hyogo	25,047	107.4%	25,027	343
4	Yamaguchi	23,217	94.1%	16,519	105
5	Kanagawa	20,460	102.5%	24,142	313
6	Ibaraki	20,128	94.8%	18,307	215
7	Osaka	20,110	98.0%	31,667	638
8	Saitama	15,936	98.4%	23,690	407
9	Aichi	14,614	104.4%	16,028	288
10	Okayama	14,059	87.0%	12,482	126
11	Shiga	13,982	101.2%	10,357	124
12	Mie	13,921	97.9%	15,671	145
13	Niigata	8,500	97.8%	8,570	82
14	Tokushima	7,867	110.5%	7,296	47
15	Gunma	7,302	85.9%	10,334	103
16	Toyama	6,968	99.3%	16,026	125
17	Oita	6,726	98.7%	3,215	46
18	Fukushima	6,724	97.6%	8,619	103
19	Tochigi	5,919	81.7%	8,170	93
20	Fukuoka	5,709	100.7%	9,428	157
21	Wakayama	4,482	91.6%	6,846	90
22	Ehime	3,983	92.0%	3,996	53
23	Yamagata	3,738	134.0%	4,313	37
24	Tokyo	3,658	90.1%	11,089	289
25	Gifu	3,248	95.0%	6,633	119
26	Hiroshima	2,892	71.7%	5,877	110
27	Fukui	2,461	85.2%	3,516	63
28	Hokkaido	2,259	104.8%	3,802	128
29	Kyoto	2,219	111.1%	5,943	137
30	Ishikawa	2,084	99.8%	2,621	37
31	Saga	2,020	100.8%	2,831	42
32	Kagawa	1,960	97.6%	4,416	57
33	Miyazaki	1,871	95.3%	2,191	39
34	Kumamoto	1,480	70.7%	4,751	53
35	Nara	1,438	112.1%	4,051	76
36	Miyagi	1,003	98.6%	1,513	47
37	Nagano	968	104.0%	2,109	59
38	Akita	793	118.0%	2,188	21
39	Iwate	782	113.2%	1,472	23
40	Shimane	501	124.3%	1,126	14
41	Yamanashi	457	85.6%	1,197	25
42	Aomori	375	85.1%	503	20
43	Kagoshima	282	103.8%	405	30
44	Nagasaki	160	111.0%	367	22
45	Kochi	107	96.1%	395	17
46	Okinawa	97	111.3%	600	37
47	Tottori	83	102.5%	211	9
	Total	333,846	97.4%	398,040	5,641

(Source) Ministry of Economy, Trade and Industry [Annual Business Survey (Survey of Manufacturing Establishments)]

4 Number of employed workers

About 960,000 workers are employed making the industry to rank 3rd among manufacturing industries.

Changes in the number of employees by manufacturing industry (2005-2023)



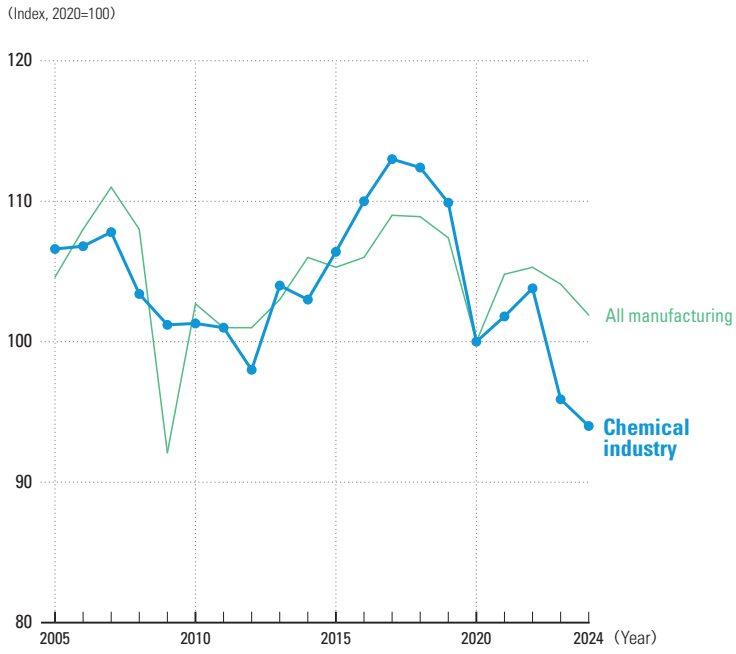
(Persons)

Industry \ Year	Every 5th year				Recent three years			
	2005	2010	2015	2020	2021	2022	2023	
Chemical industry	342,481	344,968	348,895	377,971	390,918	395,304	398,040	5.1%
Plastic products	436,897	420,179	411,676	440,660	449,270	450,321	449,253	5.8%
Rubber products	124,613	117,176	114,775	111,724	113,806	114,710	115,169	1.5%
Chemical industry including plastic & rubber products	**903,991**	**882,323**	**875,346**	**930,355**	**953,994**	**960,335**	**962,462**	**12.4%**
Food	1,104,292	1,122,817	1,109,819	1,094,454	1,105,543	1,122,274	1,122,868	14.5%
Printing & allied	340,890	299,038	263,891	235,105	252,593	247,854	244,616	3.2%
Ceramic, stone & clay products	293,013	250,001	242,816	232,706	243,516	242,236	239,697	3.1%
Iron & steel	213,056	219,983	209,748	218,553	221,240	220,443	217,804	2.8%
Fabricated metal products	657,942	578,559	583,664	582,642	610,218	607,992	602,242	7.8%
General machinery	983,449	–	–	–	–	–	–	–
General-purpose machinery	–	324,636	306,415	318,401	329,433	316,689	317,659	4.1%
Production machinery	–	543,070	564,958	606,843	661,660	663,565	657,818	8.5%
Business oriented machinery	–	211,834	210,084	209,694	213,168	214,635	220,962	2.9%
Electronic parts, devices & electronic circuits	490,140	452,169	381,686	412,146	414,194	414,872	419,731	5.4%
Electrical machinery, equipment & supplies	559,413	483,979	482,552	480,830	504,943	513,626	500,578	6.5%
Information & communication electronics equipment	205,331	212,466	136,141	112,986	112,178	111,419	105,807	1.4%
Transportation equipment	944,352	948,824	1,041,452	1,017,610	1,035,398	1,056,926	1,067,909	13.8%
Others	1,461,123	1,134,148	1,089,220	1,013,231	1,056,417	1,059,069	1,054,320	13.6%
Total manufacturing	8,156,992	7,663,847	7,497,792	7,465,556	7,714,495	7,751,935	7,734,473	100.0%

(Source) Since 2021, Ministry of Economy, Trade and Industry [Annual Business Survey (Survey of Manufacturing Establishments)]
(Note) Electrical machinery was divided into electronic parts & devices, electrical machinery, and information & communication electronics equipment in 2002.
General machinery was divided into general-purpose machinery, production machinery, and business oriented machinery in 2008.
Electronic circuits have been added to electronic parts & devices since 2011.

5 Labor productivity/Working hours

Index of labor productivity (2005-2024)

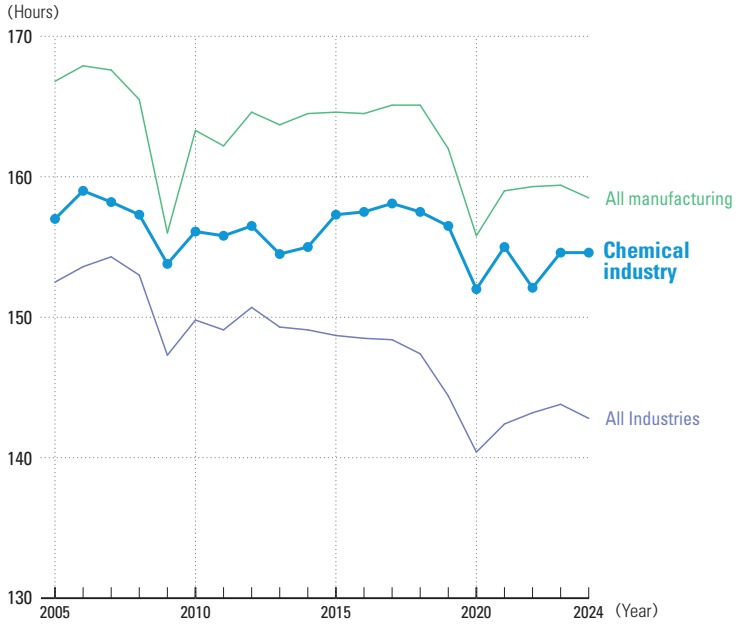


(Index, 2020=100)

Year		All manufacturing		Chemical industry	
		Index	Increase rate	Index	Increase rate
Every 5th year	2005	104.6	2.2%	106.6	▲4.6%
	2010	102.7	11.5%	101.3	0.1%
	2015	105.3	▲0.4%	106.4	3.5%
	2020	100.0	▲6.9%	100.0	▲9.0%
Recent three years	2022	105.3	0.4%	103.8	2.0%
	2023	104.1	▲1.5%	95.9	▲5.6%
	2024	101.9	▲2.1%	94.0	▲2.3%

(Source) Japan Productivity Center
(Note) Petroleum & coal products manufacturing industry is included in the chemical industry.

Working hours (monthly average of total net working hours) (2005-2024)



(Hours)

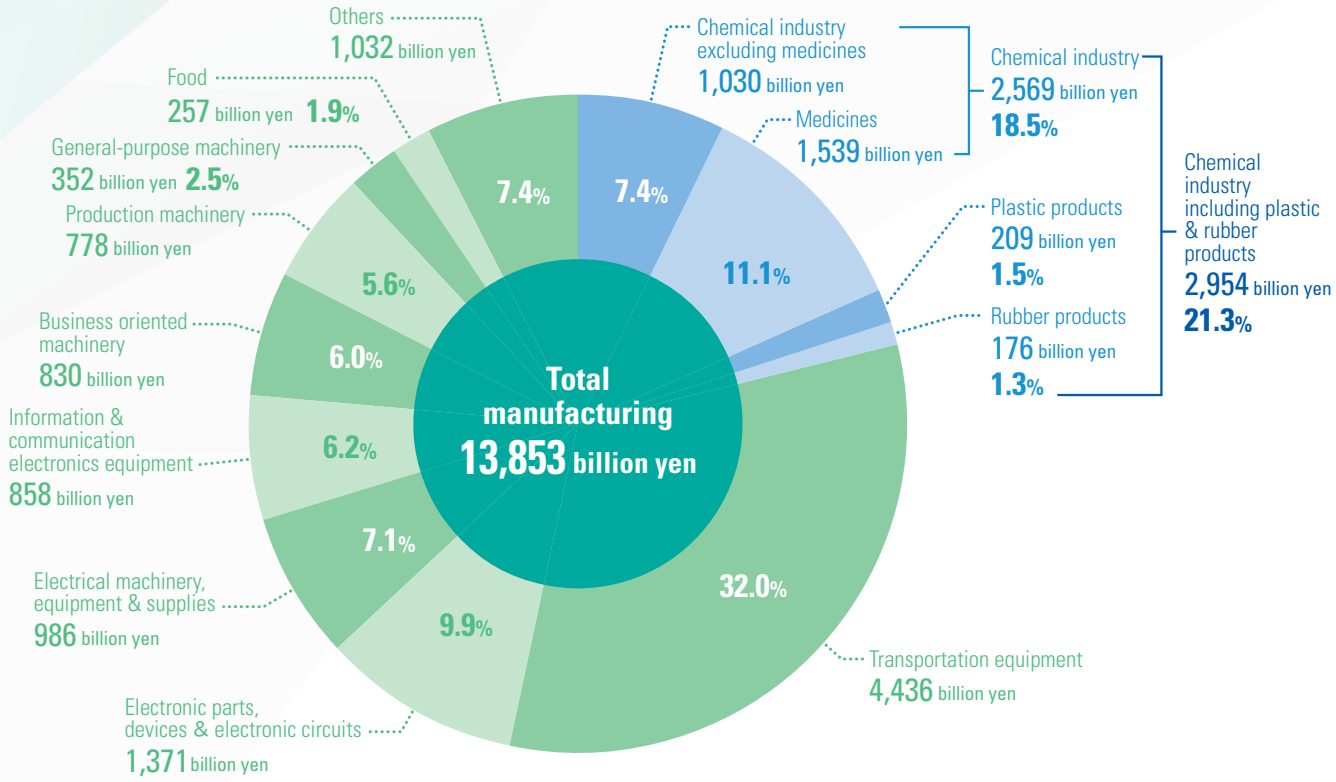
Year		All industries	All manufacturing	Chemical industry
Every 5th year	2005	152.5	166.8	157.0
	2010	149.8	163.3	156.1
	2015	148.7	164.6	157.3
	2020	140.4	155.8	152.0
Recent three year	2022	143.2	159.3	152.1
	2023	143.8	159.4	154.6
	2024	142.8	158.5	154.6

(Source) Ministry of Health, Labour and Welfare [Monthly Labour Survey]
(Note) Petroleum & coal products manufacturing industry is included in the chemical industry.

6 Research and development expenditures

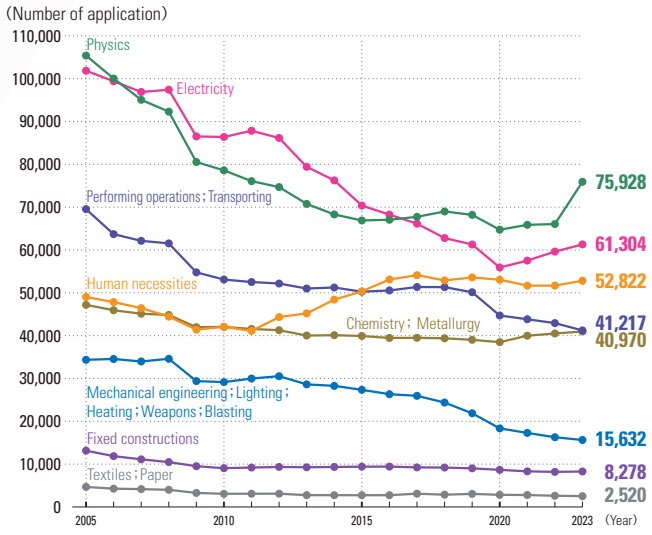
R&D expenditures of chemical industry amounted to 3.0 trillion yen.

Ratio of R&D expenditures by manufacturing industry in FY2023



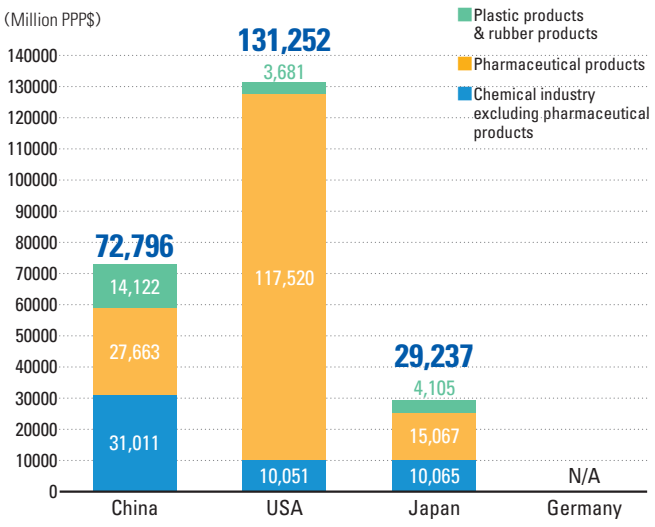
(Source) Ministry of Internal Affairs and Communications [Survey of Research and Development]
When there are no reports, it is indicated as "N/A".

Trend of number of applications for patents by classification (2005-2023)



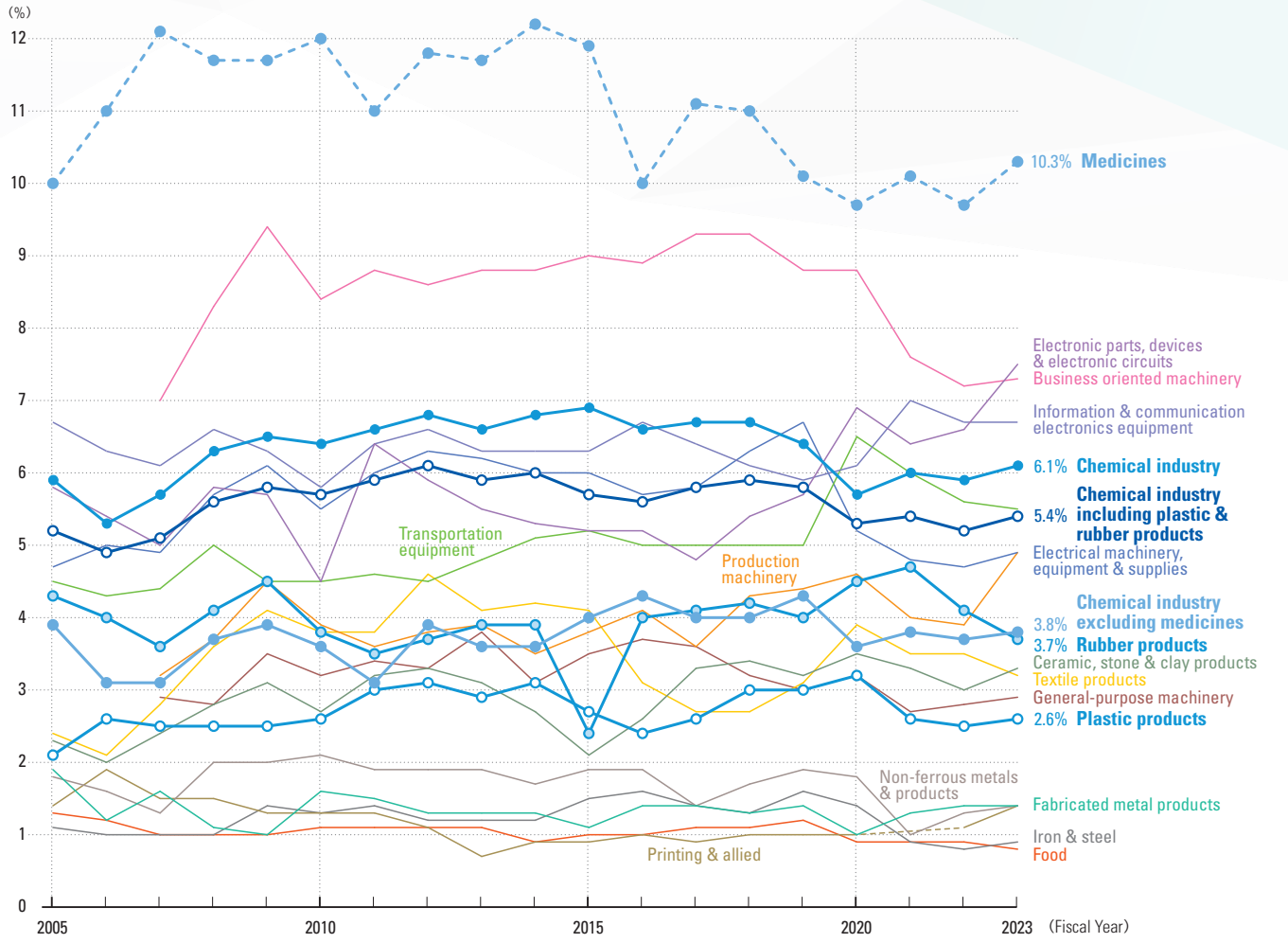
(Source) Japan Patent Office [Japan Patent Office Annual Report]

R&D expenditures of chemical industry in the top four countries in shipment (2022)



(Source) OECD [OECD Data Explorer]
(Note) PPP: Purchasing Power Parity
When there are no reports, it is indicated as "N/A".

Ratio of R&D expenditures to sales by manufacturing industry (FY2005-FY2023)



(%)

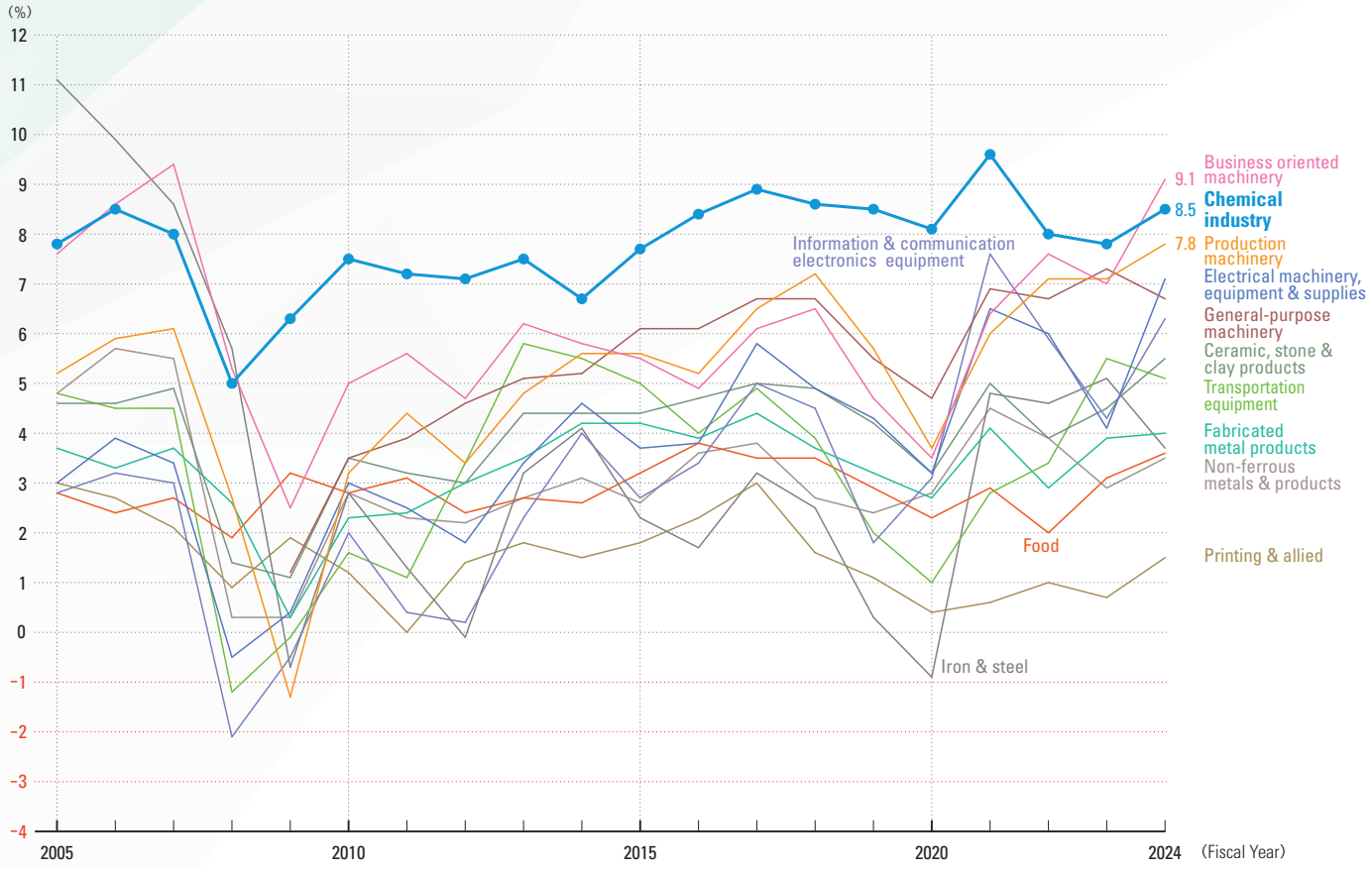
Industry \ Fiscal year	Every 5th year				Recent three years		
	2005	2010	2015	2020	2021	2022	2023
Chemical industry	5.9	6.4	6.9	5.7	6.0	5.9	6.1
Chemical industry excluding medicines	3.9	3.6	4.0	3.6	3.8	3.7	3.8
Medicines	10.0	12.0	11.9	9.7	10.1	9.7	10.3
Plastic products	2.1	2.6	2.7	3.2	2.6	2.5	2.6
Rubber products	4.3	3.8	2.4	4.5	4.7	4.1	3.7
Chemical industry including plastic & rubber products	5.2	5.7	5.7	5.3	5.4	5.2	5.4
Food	1.3	1.1	1.0	0.9	0.9	0.9	0.8
Textile products	2.4	3.8	4.1	3.9	3.5	3.5	3.2
Printing & allied	1.4	1.3	0.9	1.0	–	1.1	1.4
Ceramic, stone & clay products	2.3	2.7	2.1	3.5	3.3	3.0	3.3
Iron & steel	1.1	1.3	1.5	1.4	0.9	0.8	0.9
Non-ferrous metals & products	1.8	2.1	1.9	1.8	1.0	1.3	1.4
Fabricated metal products	1.9	1.6	1.1	1.0	1.3	1.4	1.4
General-purpose machinery	–	3.2	3.5	3.2	2.7	2.8	2.9
Production machinery	–	3.9	3.8	4.6	4.0	3.9	4.9
Business oriented machinery	–	8.4	9.0	8.8	7.6	7.2	7.3
Electronic parts, devices & electronic circuits	5.8	4.5	5.2	6.9	6.4	6.6	7.5
Electrical machinery, equipment & supplies	4.7	5.5	6.0	5.2	4.8	4.7	4.9
Information & communication electronics equipment	6.7	5.8	6.3	6.1	7.0	6.7	6.7
Transportation equipment	4.5	4.5	5.2	6.5	6.0	5.6	5.5
Total manufacturing	3.9	3.9	4.3	4.4	4.0	3.9	4.0

(Source) Ministry of Internal Affairs and Communications [Survey of Research and Development]

7 Operating profit margin

Chemical industry is second position in operating profit margin.

Trend of operating profit margin by manufacturing industry (FY2005-FY2024)



(%)

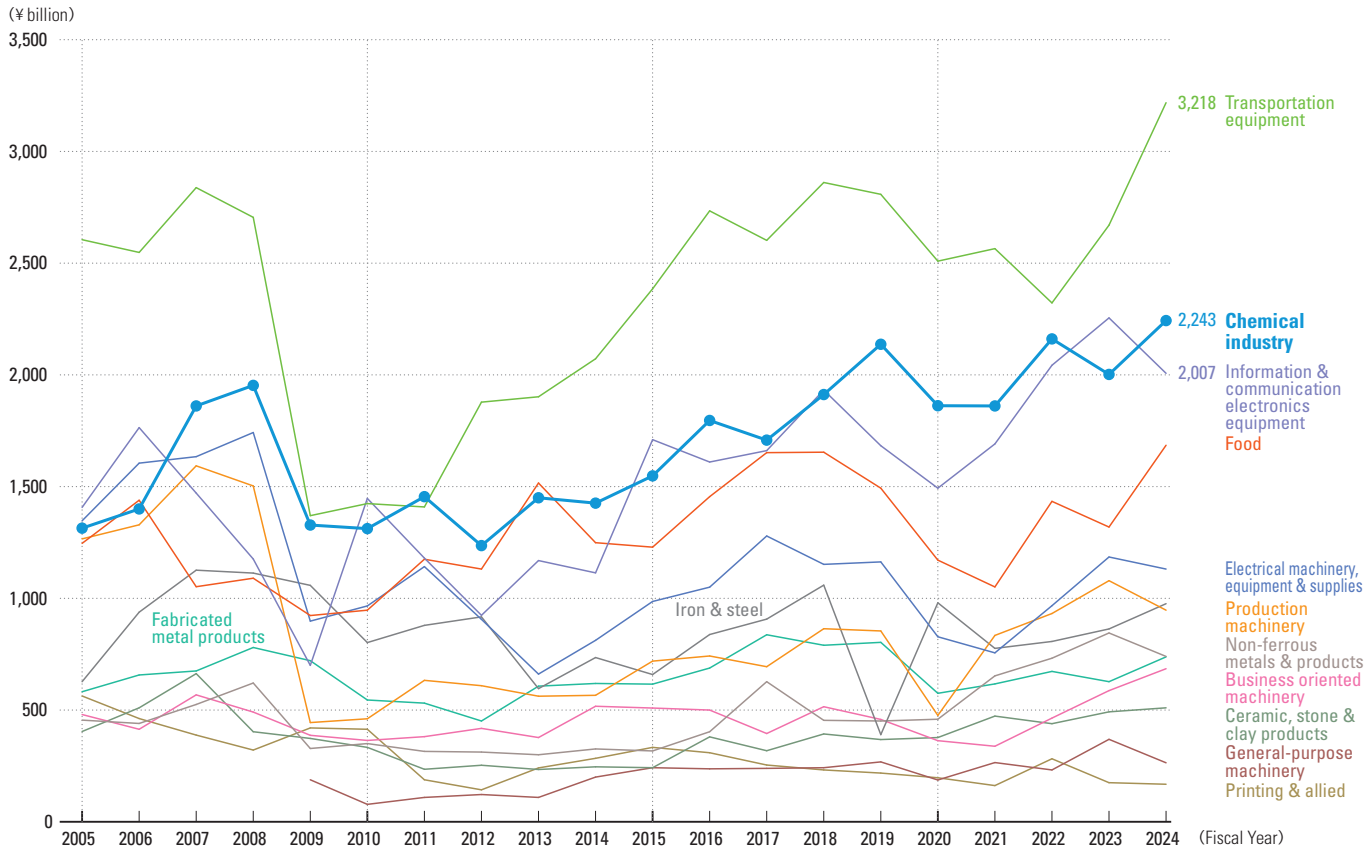
Industry \ Fiscal year	Every 5th year				Recent three years		
	2005	2010	2015	2020	2022	2023	2024
Chemical industry	**7.8**	**7.5**	**7.7**	**8.1**	**8.0**	**7.8**	**8.5**
Food	2.8	2.8	3.2	2.3	2.0	3.1	3.6
Printing & allied	3.0	1.2	1.8	0.4	1.0	0.7	1.5
Ceramic, stone & clay products	4.6	3.5	4.4	3.2	3.9	4.5	5.5
Iron & steel	11.1	2.8	2.3	-0.9	4.6	5.1	3.7
Non-ferrous metals & products	4.8	2.8	2.6	2.8	3.9	2.9	3.5
Fabricated metal products	3.7	2.3	4.2	2.7	2.9	3.9	4.0
General-purpose machinery	–	3.5	6.1	4.7	6.7	7.3	6.7
Production machinery	5.2	3.2	5.6	3.7	7.1	7.1	7.8
Business oriented machinery	7.6	5.0	5.5	3.5	7.6	7.0	9.1
Electrical machinery, equipment & supplies	3.0	3.0	3.7	3.2	6.0	4.1	7.1
Information & communication electronics equipment	2.8	2.0	2.7	3.1	5.9	4.3	6.3
Transportation equipment	4.8	1.6	5.0	1.0	3.4	5.5	5.1
Total manufacturing	4.5	3.2	4.3	3.1	4.5	5.1	5.4

(Source) Ministry of Finance [Financial Statements Statistics of Corporations by Industry]
(Note) Information & communication electronic equipment was newly established in 2004, and general-purpose machinery was newly established in 2009.

8 Amount of capital investment

Capital investment of chemical industry amounted to 2.2 trillion yen making it ranked 2nd in manufacturing industries.

Trend of capital investment by manufacturing industry (FY2005-FY2024)



(¥ billion)

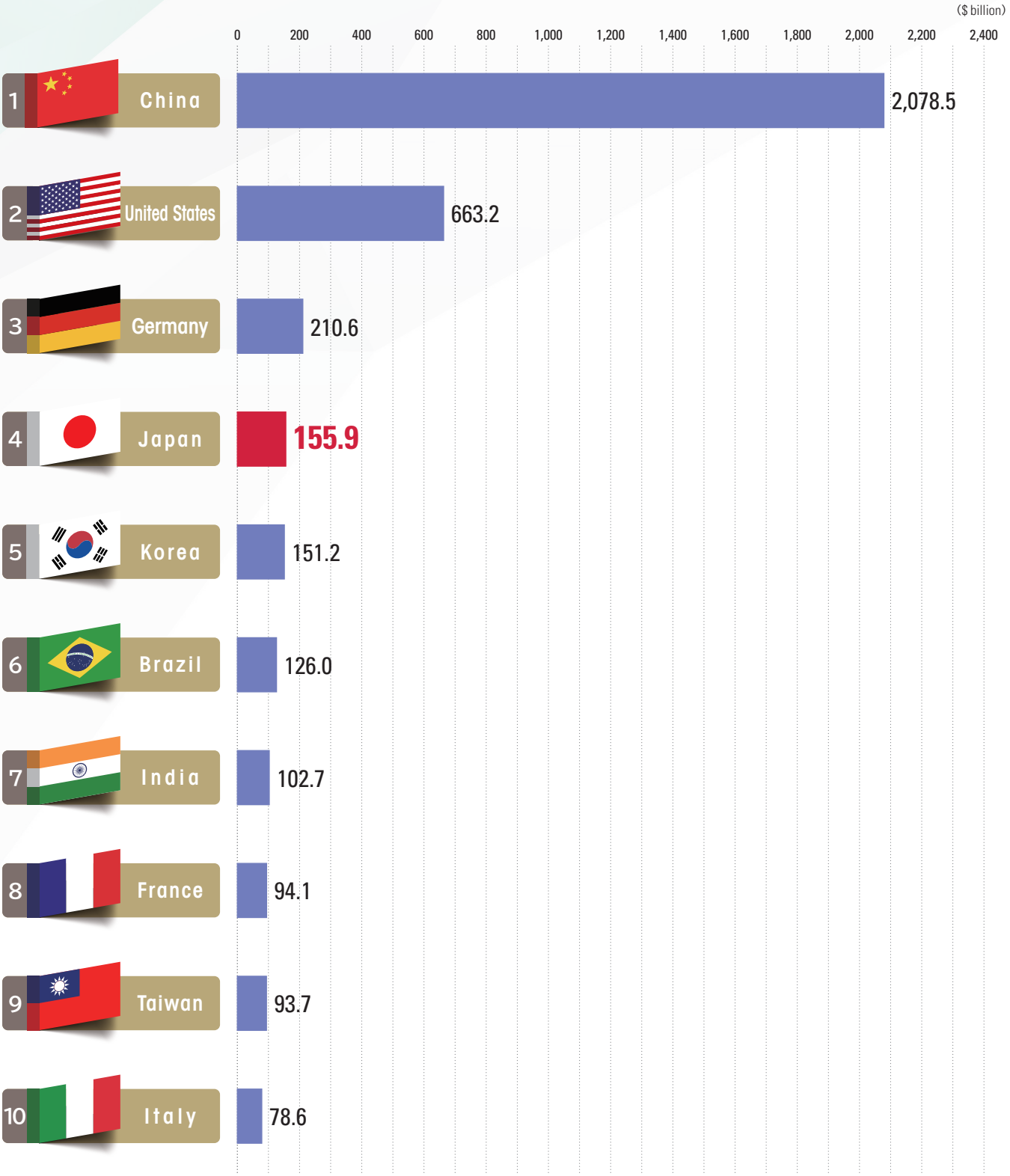
Industry \ Fiscal year	Every 5th year				Recent three years			
	2005	2010	2015	2020	2022	2023	2024	
Chemical industry	**1,314**	**1,312**	**1,548**	**1,862**	**2,161**	**2,002**	**2,243**	**13.1%**
Food	1,246	947	1,229	1,171	1,434	1,319	1,685	9.8%
Printing & allied	563	414	333	197	282	175	168	1.0%
Ceramic, stone & clay products	404	333	242	377	439	492	510	3.0%
Iron & steel	627	802	659	980	807	863	976	5.7%
Non-ferrous metals & products	455	350	317	459	732	845	740	4.3%
Fabricated metal products	582	545	616	575	673	627	738	4.3%
General-purpose machinery	–	78	242	187	232	369	264	1.5%
Production machinery	1,266	461	719	476	932	1,079	947	5.5%
Business oriented machinery	480	364	509	363	464	587	685	4.0%
Electrical machinery, equipment & supplies	1,347	966	986	828	967	1,185	1,131	6.6%
Information & communication electronics equipment	1,407	1,447	1,710	1,493	2,043	2,255	2,007	11.7%
Transportation equipment	2,605	1,424	2,385	2,509	2,322	2,670	3,218	18.8%
Others	2,049	1,828	1,857	1,901	1,954	2,077	1,831	10.7%
Total manufacturing	14,343	11,272	13,351	13,379	15,443	16,543	17,143	100.0%

(Source) Ministry of Finance [Financial Statements Statistics of Corporations by Industry]
(Note) Information & communication electronic equipment was newly established in 2004, and general-purpose machinery was newly established in 2009.

9 Shipments by Country/Region

Japan is the 4th largest in the world.

Chemical Shipments by Country/Region in 2023



(Source) American Chemistry Council
(Note) Pharmaceuticals is excluded.

10

The world's 30 leading chemical companies

Four Japanese companies are included among the world' s leading chemical companies.

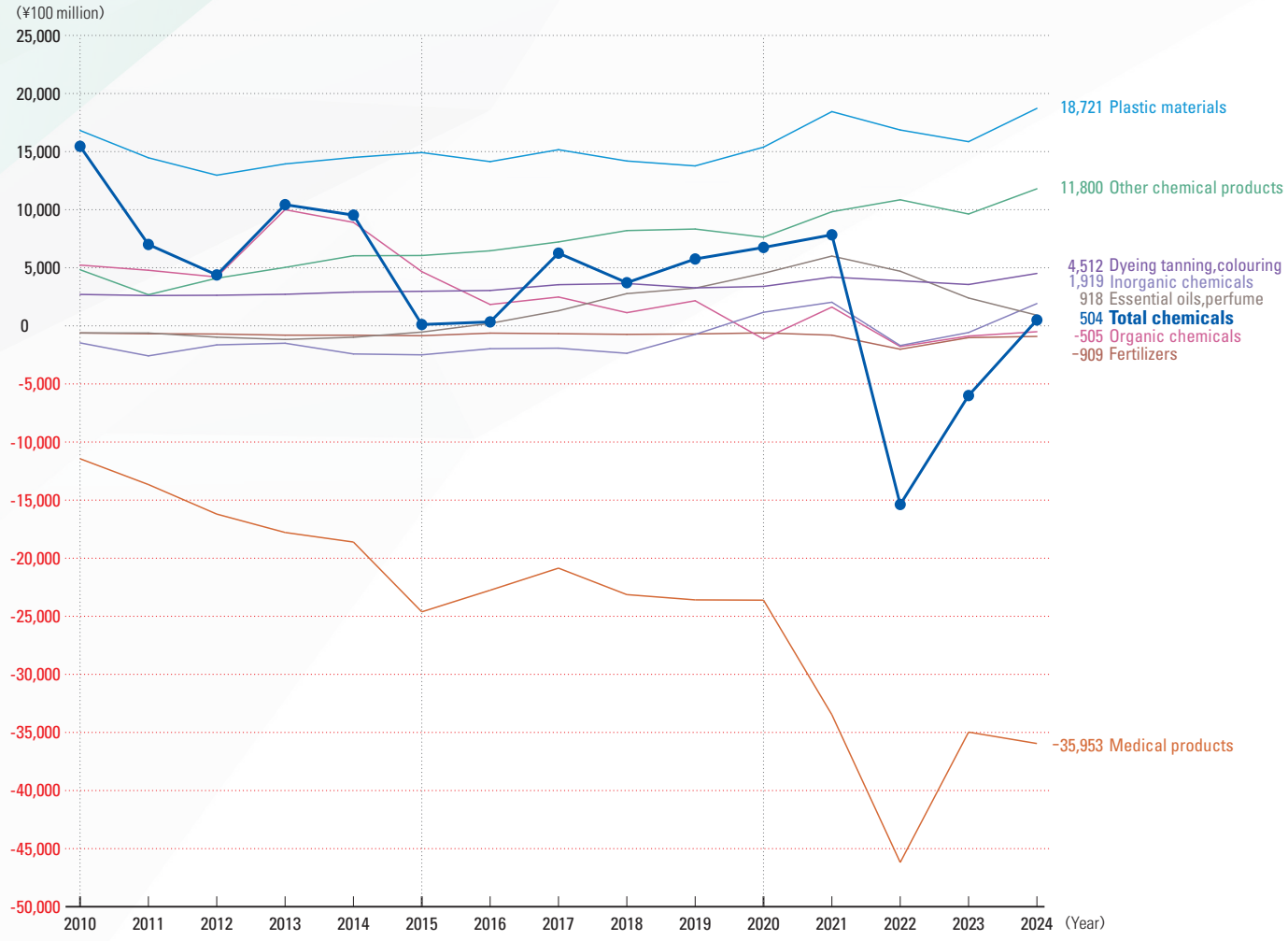
The world's 30 leading chemical companies in 2023

Ranking	Company	Country/Region	Chemical sales			Chemical operating profits		
			2023 ($ million)	Change from 2022 (%)	Chemical sales as of total sales (%)	2023 ($ million)	Change from 2022 (%)	Operating profit margin (%)
1	BASF	Germany	74,529	–22.1	100.0	4,627	–44.0	6.2
2	Sinopec	China	58,097	–8.6	12.8	–1,451	def.	def.
3	Dow	US	44,622	–21.6	100.0	2,100	–63.2	4.7
4	LG Chem	South Korea	42,280	6.5	100.0	1,935	–15.6	4.6
5	PetroChina	China	40,880	3.4	9.6	97	n.m.	0.2
6	ExxonMobil	US	40,672	–14.4	12.2	5,598	–23.9	13.8
7	Sabic	Saudi Arabia	37,743	–22.7	100.0	882	–83.5	2.3
8	LyondellBasell Industries	US	31,928	–19.1	77.7	2,810	–32.6	8.8
9	Formosa Plastics	Taiwan	31,126	–19.1	64.5	N/A	N/A	N/A
10	Linde	England	30,694	0.3	93.4	8,579	16.7	28.0
11	Ineos	England	29,563	–30.1	100.0	761	–80.6	2.6
12	Air Liquide	France	29,441	–7.6	98.6	3,253	8.3	11.0
13	Syngenta Group	Switzerland	26,800	–6.0	83.2	N/A	N/A	N/A
14	Rongsheng Petrochemical	China	26,788	5.9	58.3	N/A	N/A	N/A
15	Mitsubishi Chemical Group	Japan	26,405	–3.4	84.6	1,066	–17.0	4.0
16	Wanhua Chemical Group	China	24,765	5.9	100.0	3,044	–0.5	12.3
17	Reliance Industries	India	22,799	–5.0	18.8	N/A	N/A	N/A
18	Hengli Petrochemical	China	21,849	14.4	65.9	N/A	N/A	N/A
19	Shell	England	17,342	–17.7	5.5	N/A	N/A	N/A
20	Shin-Etsu Chemical	Japan	17,188	–14.0	100.0	4,990	–29.8	29.0
21	Evonik Industries	Germany	16,514	–17.4	100.0	–72	def.	def.
22	Jiangsu Eastern Shenghong	China	15,733	79.2	79.3	N/A	N/A	N/A
23	Indorama Ventures	Thailand	15,713	–17.9	100.0	16	–98.8	0.1
24	Covestro	Germany	15,551	–20.0	100.0	90	–66.3	0.6
25	Yara	Norway	15,431	–35.4	100.0	312	–91.8	2.0
26	Toray Industries	Japan	15,312	–1.8	87.3	745	7.2	4.9
27	Lotte Chemical	South Korea	15,264	–10.5	100.0	–266	def.	def.
28	Sumitomo Chemical	Japan	14,479	–8.6	83.1	–57	def.	def.
29	Braskem	Brazil	14,129	–26.9	100.0	–350	def.	def.
30	Mosaic	US	13,696	–28.4	100.0	1,710	–67.5	12.5

(Source) Chemical and Engineering News
(Note) 1 Pharmaceuticals is excluded.
2 N/A means not available, def. means deficit, and n.m. means not meaningful.

1.1 Trade balance

Trade balance of chemicals by product (2010-2024)



(Source) Ministry of Finance [Trade Statistics]

Exports and imports of chemicals (2010-2024)

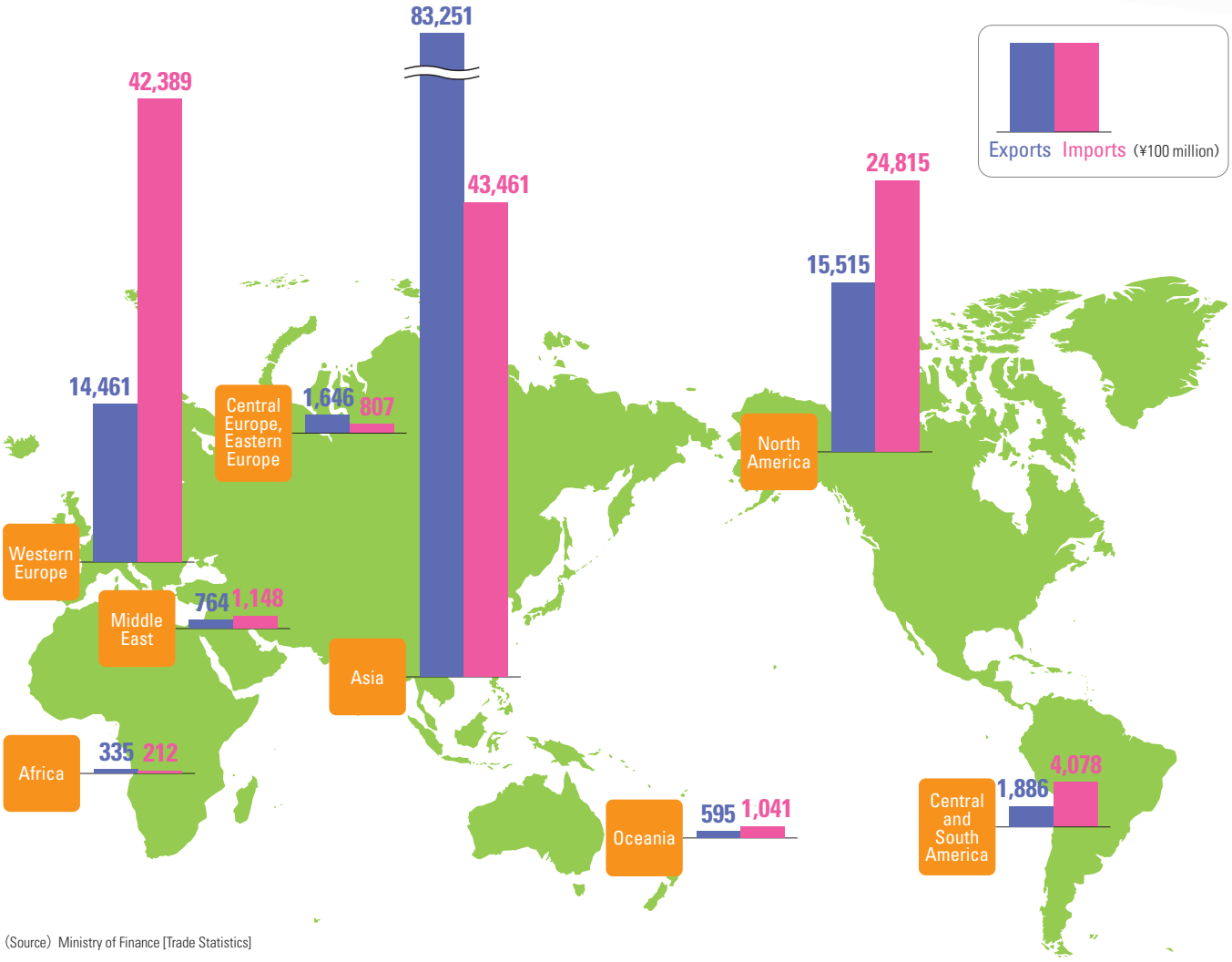
(¥100 million)

Exports						Articles	Imports					
Every 5th year			Recent three years				Every 5th year			Recent three years		
2010	2015	2020	2022	2023	2024		2010	2015	2020	2022	2023	2024
128	142	127	246	192	236	Fertilizers	745	990	731	2,258	1,207	1,145
3,772	4,034	7,043	13,217	12,032	11,331	Inorganic chemicals	5,237	6,529	5,875	14,911	12,605	9,412
18,728	21,166	15,556	22,086	20,422	21,287	Organic chemicals	13,496	16,499	16,688	23,867	21,300	21,792
23,360	24,441	24,198	31,545	29,537	33,470	Plastic materials	6,542	9,523	8,814	14,685	13,683	14,748
4,048	4,629	4,787	5,824	5,393	6,394	Dyeing tanning,colouring	1,343	1,655	1,393	1,938	1,834	1,881
3,787	4,623	8,360	11,428	12,304	13,339	Medical products	15,226	29,241	31,973	57,617	47,273	49,292
2,479	3,676	9,141	10,695	8,892	8,296	Essential oils,perfume	3,087	4,213	4,619	5,993	6,495	7,378
12,950	14,883	16,125	22,896	21,470	24,101	Other chemical products	8,119	8,828	8,495	12,044	11,842	12,301
69,253	77,594	85,336	117,938	110,241	118,453	Total chemicals	53,794	77,479	78,588	133,314	116,240	117,949

(Source) Ministry of Finance [Trade Statistics]

12 Exports and imports of chemicals by region

Exports and imports of chemicals by region in 2024



(Source) Ministry of Finance [Trade Statistics]

Exports and imports of chemicals by region (2010-2024)

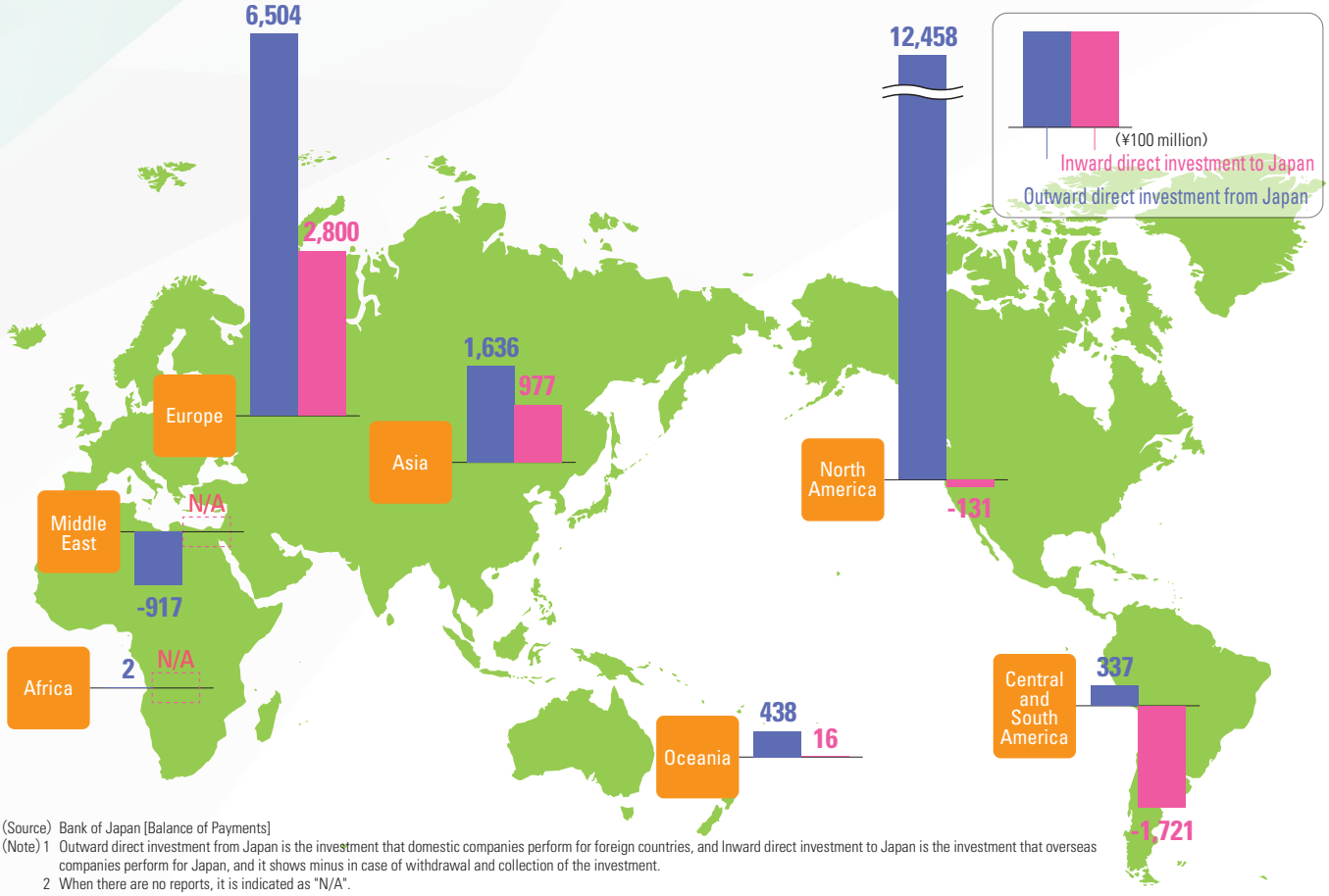
(¥100 million)

Exports						Region	Imports					
Every 5th year			Recent three years				Every 5th year			Recent three years		
2010	2015	2020	2022	2023	2024		2010	2015	2020	2022	2023	2024
51,799	57,502	62,056	83,581	77,449	83,251	Asia	17,474	26,428	27,422	50,269	42,896	43,461
494	460	431	829	615	595	Oceania	595	803	653	1,092	1,063	1,041
6,824	9,048	9,994	15,762	15,241	15,515	North America	11,190	14,194	15,176	26,999	24,298	24,815
1,819	1,488	1,144	1,836	1,687	1,886	Central and South America	2,013	3,082	3,324	4,716	4,850	4,078
7,084	7,689	9,837	12,988	12,872	14,461	Western Europe	21,413	31,367	30,689	47,616	41,061	42,389
374	425	1,120	1,970	1,499	1,646	Central Europe,Eastern Europe	330	541	597	810	751	807
580	693	437	574	583	764	Middle East	652	880	649	1,481	1,143	1,148
278	288	317	397	296	335	Africa	128	183	78	332	179	212
69,253	77,594	85,336	117,938	110,240	118,453	Total	53,794	77,479	78,588	133,314	116,240	117,949

(Source) Ministry of Finance [Trade Statistics]

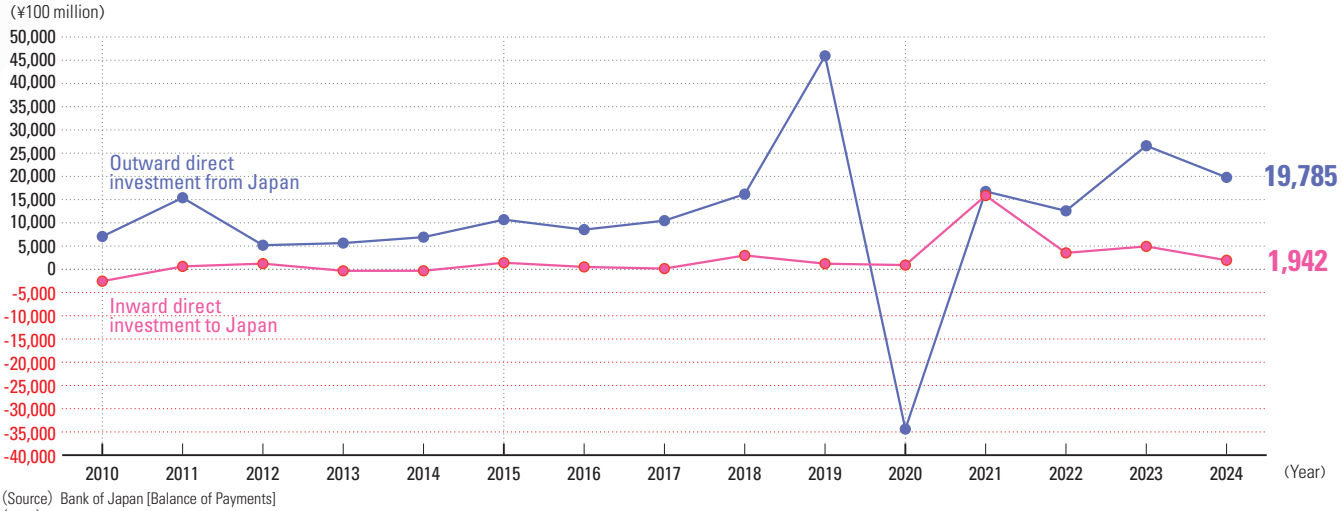
13 Outward/inward direct investments

Outward direct investment of Japanese chemical industry and inward direct investment to chemical industry in Japan in 2024



(Source) Bank of Japan [Balance of Payments]
(Note) 1 Outward direct investment from Japan is the investment that domestic companies perform for foreign countries, and Inward direct investment to Japan is the investment that overseas companies perform for Japan, and it shows minus in case of withdrawal and collection of the investment.
2 When there are no reports, it is indicated as "N/A".

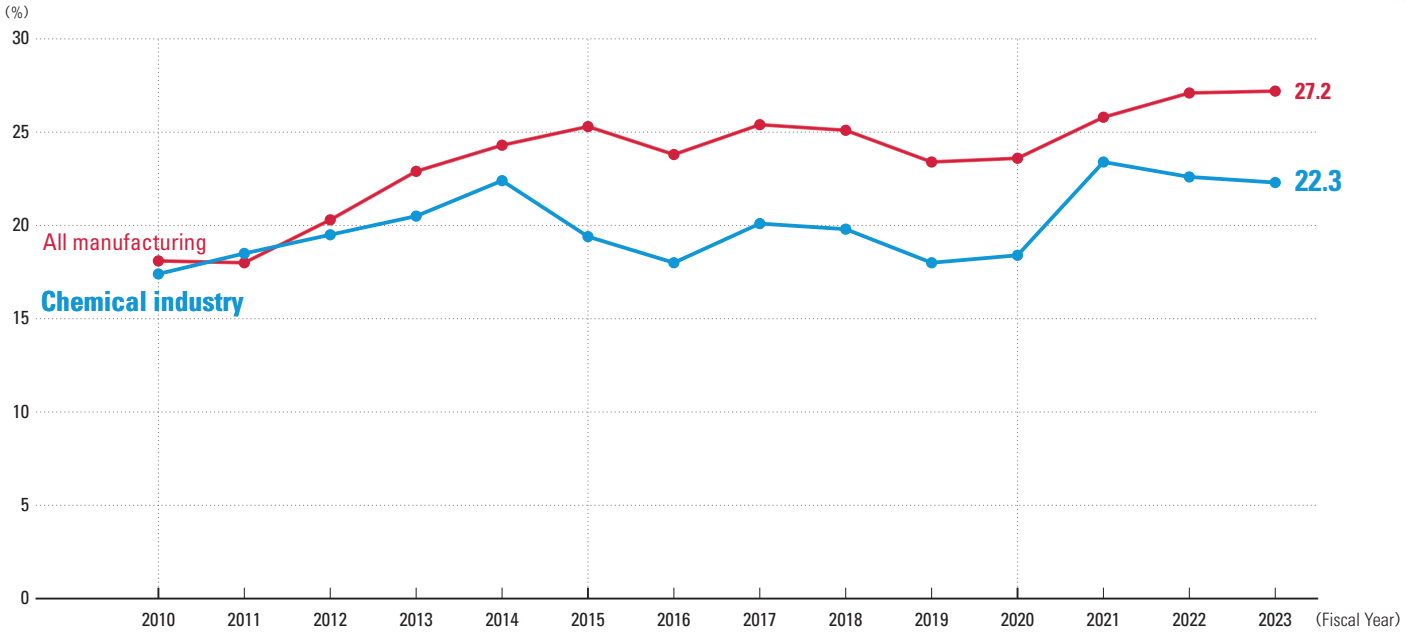
Actual outward direct investment of Japanese chemical industry and inward direct investment to chemical industry in Japan (2010-2024)



(Source) Bank of Japan [Balance of Payments]
(Note) 1 Outward direct investment from Japan is the investment that domestic companies perform for foreign countries, and Inward direct investment to Japan is the investment that overseas companies perform for Japan, and it shows minus in case of withdrawal and collection of the investment.
2 When there are no reports, it is indicated as "N/A".

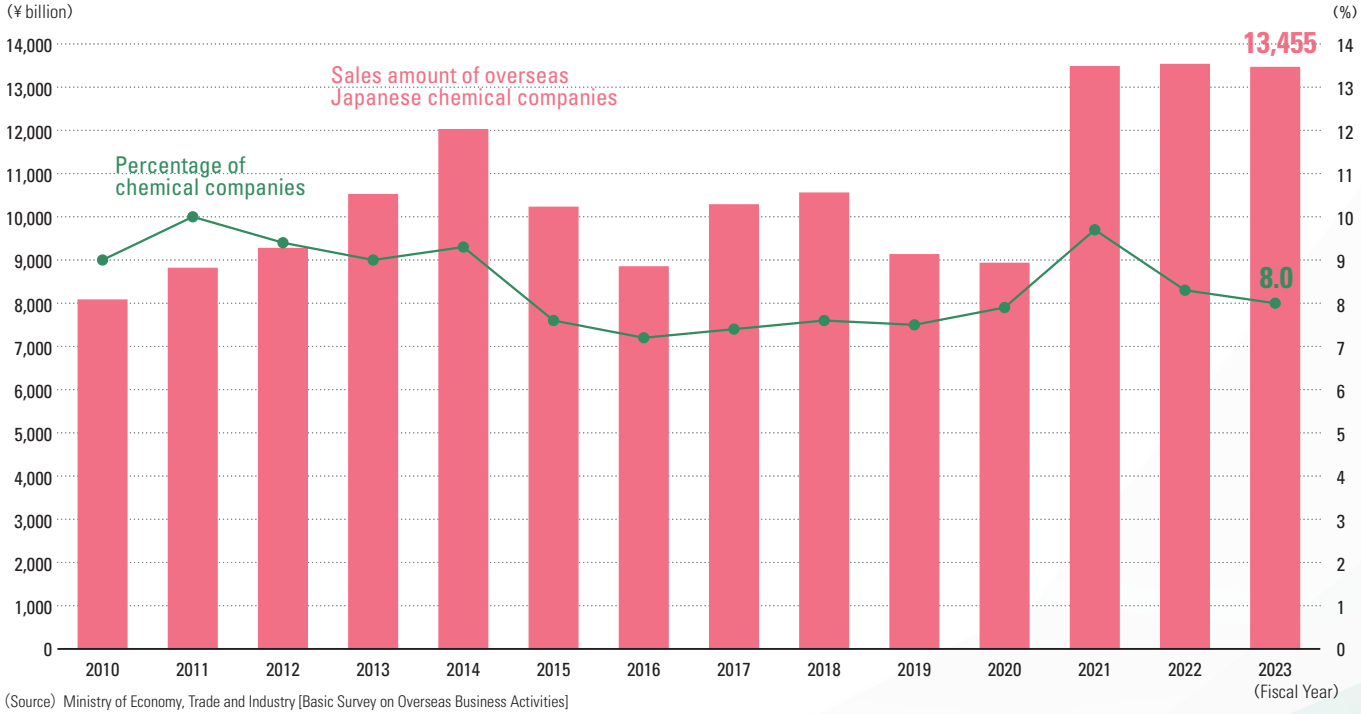
14 Ratio of overseas production/Sales of overseas subsidiary companies

Trend of overseas production of Japanese companies (FY2010-FY2023)



(Source) Ministry of Economy, Trade and Industry [Basic Survey on Overseas Business Activities]

Sales of Japanese chemical companies based overseas and its percentage of all overseas Japanese manufacturing companies' sales (FY2010-FY2023)

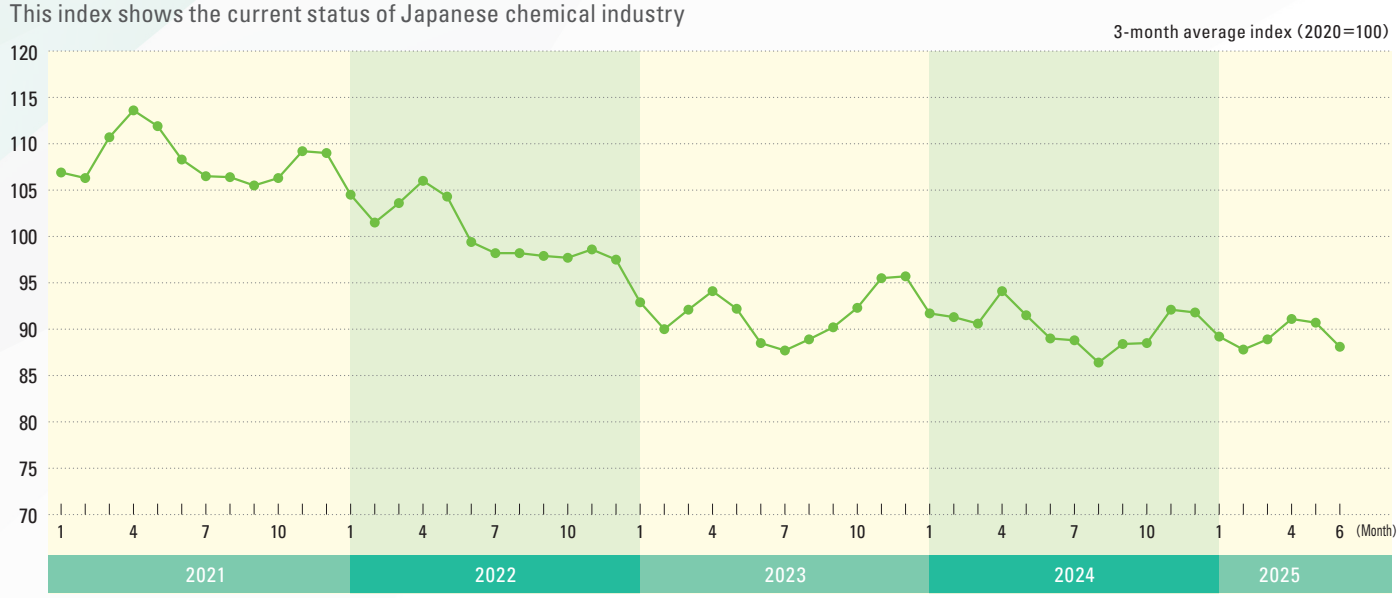


(Source) Ministry of Economy, Trade and Industry [Basic Survey on Overseas Business Activities]

JCIA Index that shows "the current state" of Japanese chemical industry

1 Shipping index of Main Chemicals

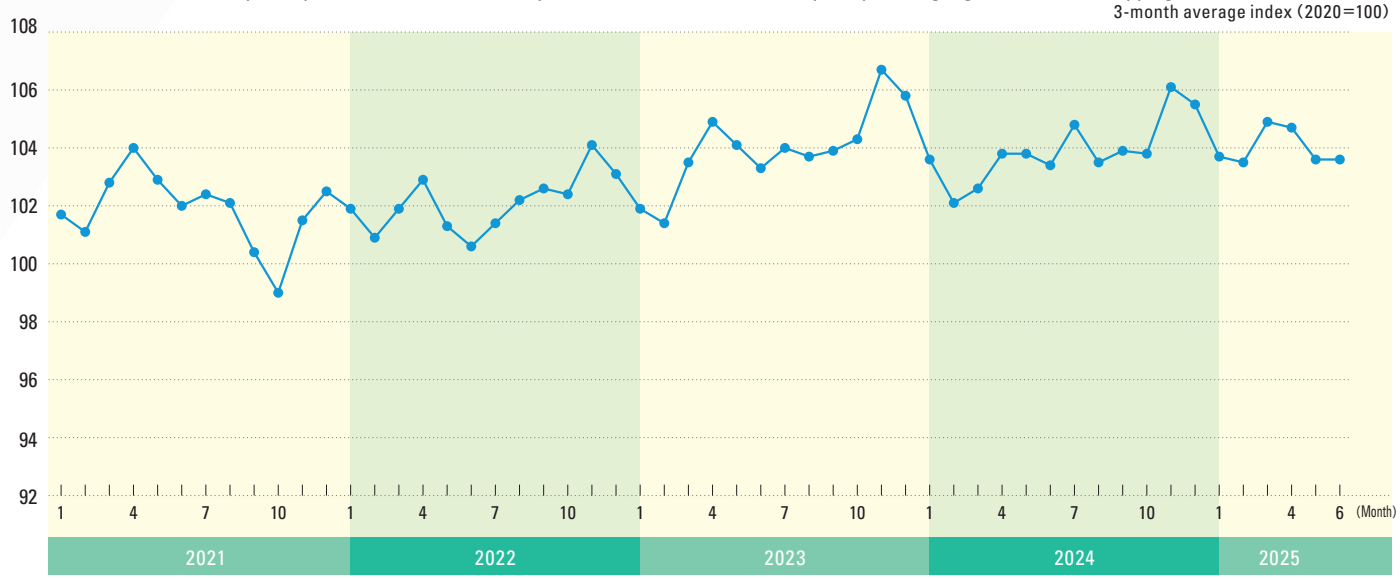
This index shows the current status of Japanese chemical industry



- Data source: Ministry of Economy, Trade and Industry "Current Survey of Production"
- Data used: Shipment volume of each major chemicals (32 product groups) is indexed versus the base year, the weighted average is calculated, and 3-month moving average is obtained.
  *Items are selected as close as possible to the final product (industry) and capable of covering many fields. Also, pharmaceuticals are not included.
- Baseline year: 1 month average of 2020

2 Production index Key User Customer Industries

You can read the relationship with production trends of the key user customer industries in Japan by reading together with the Shipping index of Main Chemicals.



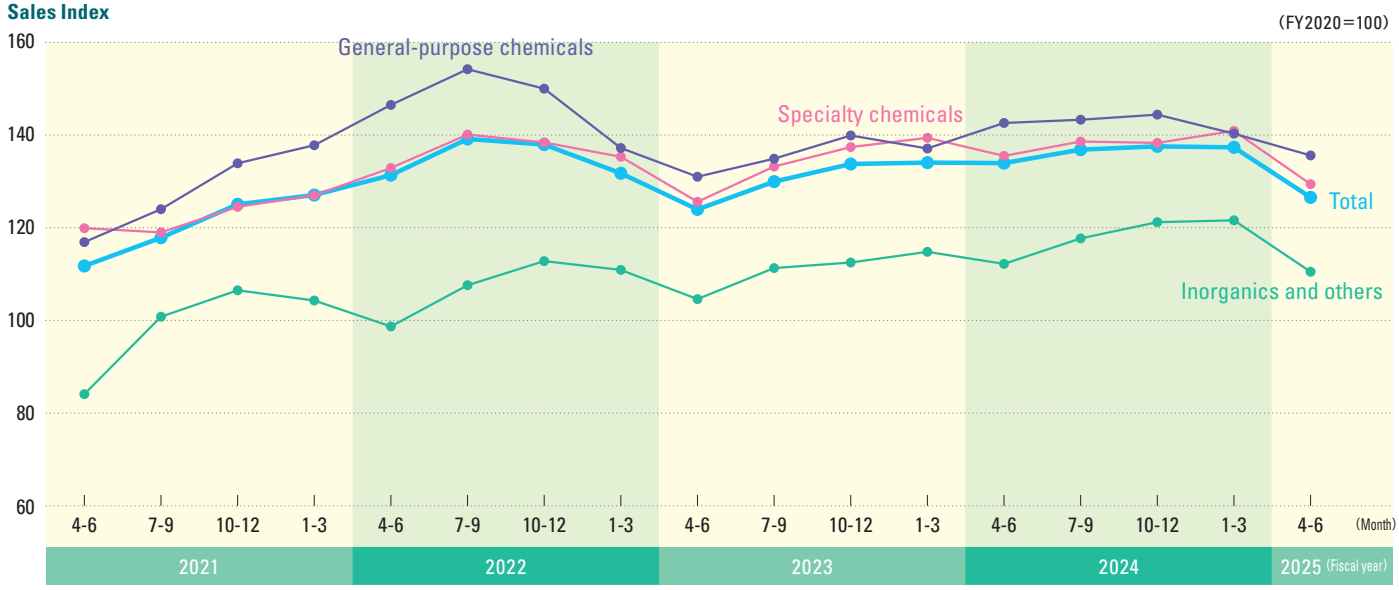
- Data source: Websites of trade groups of the main demanding industries
- Data used: Production value of major products in each industry. If no data exists, the latest 3-month average production volume or shipping value is indexed to the base year, and the impact on the chemical industry and the weight to each industry scale are taken into consideration, and corrected by the corporate goods price index.
- Baseline year: 1 month average of 2020

The chemical industry covers a wide range of fields, including petrochemicals, synthetic fibers, synthetic rubber, paints, and pharmaceuticals. So far, we have been able to explain the management status of individual chemical companies to society, however there were no published figures showing the current state of Japanese chemical industry as a whole. Therefor JCIA created the JCIA Index and published in 2017 as an indicator of showing the current status of the entire Japanese chemical industry, so that everyone in society became to be able to recognize about the current status of Japanese chemical industry. This index consists of the "Shipping index of Main Chemicals" indicating the shipment status of major chemical products in domestic chemical industry, the "Production index Key User Customer Industries" indicating the production status of customers in domestic chemical industry, and the "Corporate earnings index" indicating the consolidated performance of chemical companies. The latest JCIA Index is made public with the base table for the index on the JCIA website every month, so anyone can see it.

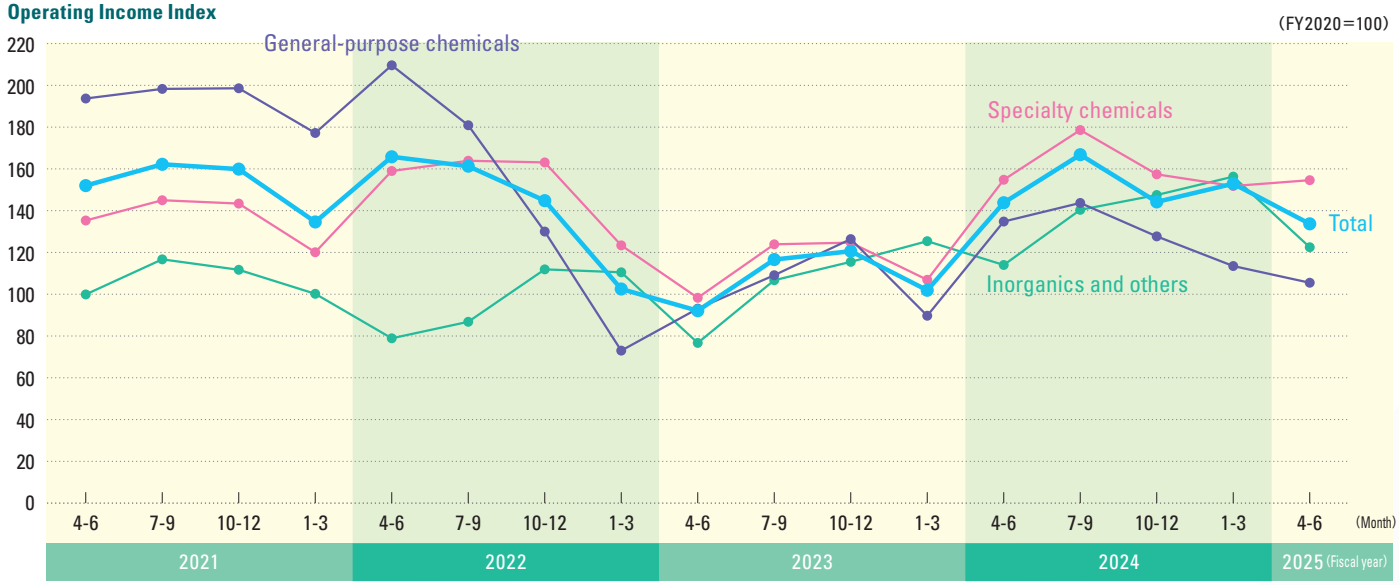
3 Corporate earnings index

You can read the relationship with the consolidated performance of chemical companies by reading together with the Shipping index of Main Chemicals.

Sales Index



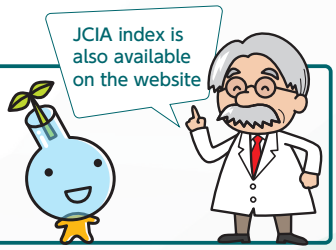
Operating Income Index



- Data source: Quarterly financial report segment information of each company
- Data used: Sales and operating income by segment of major chemical companies(29 companies)
- Baseline year: 1 quarter average of 2020

JCIA Index

https://www2.nikkakyo.org/english/data-report/report



In this report, JCIA is an abbreviated term for the Japan Chemical Industry Association which is our official name.

Why?

10/23 Chemistry Day

What is Chemistry Day?

The four associations, namely, the Chemical Society of Japan (CSJ), the Society of Chemical Engineers, Japan (SCEJ), Japan Association for Chemical Innovation (JACI), and Japan Chemical Industry Association (JCIA) have instituted that October 23rd is the "Chemistry Day", in association with the **Avogadro's Number** (6.02×10^{23}), which is a basic measuring unit in chemistry. Chemistry Day was created as a way to foster interest in chemistry.

Doctor Mole

Nikka-chan

Japan Chemical Industry Association

Sumitomo Rokko Building, 1-4-1 Shinkawa, Chuo-ku, Tokyo 104-0033, Japan
TEL 03-3297-2555 URL https://www.nikkakyo.org/

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