

Table SINV-26

International patent families granted in surface technology, coating, by region, country, or economy: 1998–2020

(Number)

Region, country, or economy	Economy by income status	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
World	na	5,638	6,197	5,743	5,740	5,661	6,110	6,003	5,490	6,365	7,257	7,061	7,555	9,275	10,863	12,146	12,106	12,834	12,867	14,516	13,653	13,856	14,283	14,146
North America	na	897	947	967	1,027	991	1,080	1,023	767	844	916	892	967	1,286	1,313	1,414	1,429	1,325	1,187	1,134	1,072	1,006	1,031	952
Canada	High	31	27	34	42	34	42	34	34	35	37	36	27	40	54	78	65	60	46	56	47	40	40	39
Mexico	Upper middle	2	1	1	0	0	0	2	1	1	1	1	2	1	2	2	4	3	4	9	11	12	6	2
United States	High	864	918	933	985	957	1,038	987	733	808	879	856	939	1,245	1,256	1,333	1,361	1,263	1,137	1,070	1,015	954	984	911
Central America and Caribbean	na	1	1	0	1	1	2	3	2	1	2	1	0	0	0	1	1	0	0	0	0	0	1	0
Puerto Rico	High	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South America	na	3	2	1	5	4	7	8	5	4	5	7	8	13	15	14	14	22	20	14	9	20	23	28
Argentina	Upper middle	1	1	0	0	0	0	2	1	0	0	0	0	0	1	3	1	1	0	0	0	1	2	1
Brazil	Upper middle	1	1	1	5	4	5	5	2	3	4	4	5	11	12	10	9	17	15	10	7	15	19	25
Europe	na	1,163	1,027	937	986	1,104	1,296	1,360	1,091	1,143	1,156	1,097	1,235	1,233	1,336	1,362	1,322	1,633	1,438	1,390	1,492	1,415	1,542	1,295
EU-27 + UK ^a	na	722	743	672	721	779	842	886	748	762	775	698	735	812	876	920	892	906	920	997	1,043	1,048	1,085	971
United Kingdom	High	61	49	32	50	65	68	72	56	47	46	37	44	51	59	49	47	46	39	47	46	46	54	47
EU-27 ^b	na	661	694	640	672	714	774	815	692	715	729	661	692	762	817	871	844	860	882	950	997	1,002	1,031	924
Austria	High	19	21	15	25	23	20	16	24	23	18	25	23	16	23	29	28	26	34	40	40	38	37	26
Belgium	High	18	10	16	15	17	18	18	13	19	24	16	20	20	28	34	24	20	25	31	39	35	36	37
Denmark	High	4	3	5	7	6	5	5	4	8	4	6	4	8	9	8	11	11	9	11	9	7	6	15
Finland	High	10	8	13	17	16	23	21	24	11	12	18	19	25	18	22	27	25	37	36	27	28	29	29
France	High	106	112	94	83	96	132	120	82	140	132	108	94	114	155	152	131	167	160	155	162	137	183	183
Germany	High	288	311	269	348	369	406	389	357	373	361	338	371	392	375	423	440	416	427	443	417	466	480	375
Hungary	High	1	2	1	2	2	2	1	1	2	1	1	2	2	4	0	0	2	2	3	0	3	0	3
Ireland	High	9	3	2	1	4	4	4	5	2	2	6	3	8	5	8	4	4	4	4	3	3	4	2
Italy	High	63	78	89	54	61	50	103	38	9	18	15	13	28	38	32	15	13	15	23	107	103	74	53
Netherlands	High	36	25	34	34	27	31	33	28	25	42	30	29	35	40	39	43	40	38	45	56	36	38	45
Spain	High	15	17	25	21	16	18	25	36	22	34	23	27	30	36	32	34	26	27	27	26	22	24	24
Sweden	High	29	38	30	25	22	27	35	39	34	41	24	22	20	25	22	25	19	17	21	19	24	22	28
Other Europe	na	441	284	264	264	326	454	473	343	381	381	399	499	420	460	442	430	727	518	393	449	367	457	324
Other Europe-2020 ^b	na	502	333	297	314	390	522	545	399	429	427	436	543	471	518	491	478	773	556	440	495	413	511	371
Belarus	Upper middle	4	1	1	2	0	1	3	2	5	3	4	2	5	0	7	4	4	2	7	7	8	10	7
Moldova	Lower middle	4	0	3	2	4	2	4	7	8	9	13	11	13	10	5	6	5	4	3	4	3	4	6
Norway	High	8	1	2	3	7	10	13	9	7	3	4	10	10	8	6	6	8	10	6	6	2	5	9
Russia	Upper middle	391	245	229	217	262	365	319	268	302	282	306	388	320	354	350	333	618	399	291	363	286	380	253
Switzerland	High	24	32	25	28	33	33	34	28	30	31	34	32	35	41	39	40	42	42	42	36	45	40	43

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Ukraine	Lower middle	7	5	5	12	18	40	98	27	29	51	37	55	36	42	32	39	43	56	40	28	21	12	1
Asia	na	3,495	3,994	3,671	3,610	3,433	3,561	3,436	3,507	4,296	5,096	4,995	5,275	6,646	8,136	9,278	9,233	9,800	10,166	11,906	11,036	11,370	11,620	11,816
China	Upper middle	57	58	99	92	97	189	347	414	557	645	871	1,361	1,874	2,362	2,951	2,631	3,167	5,204	6,553	6,152	6,624	6,899	6,987
India	Lower middle	2	2	1	1	1	3	2	4	6	3	7	6	12	10	19	16	12	9	18	14	10	21	19
Japan	High	3,162	3,410	3,165	2,996	2,707	2,760	2,385	2,233	2,603	3,238	3,194	3,281	3,844	4,621	4,708	4,455	4,531	3,231	3,572	3,161	3,120	3,011	3,001
Malaysia	Upper middle	0	0	0	0	1	1	2	1	2	2	1	3	2	5	10	9	12	11	9	7	4	2	2
Singapore	High	1	2	5	7	8	12	9	6	7	5	3	4	4	8	6	7	9	12	9	10	8	6	4
South Korea	High	213	448	292	353	496	420	496	688	931	1,024	794	510	712	922	1,345	1,611	1,601	1,263	1,322	1,357	1,343	1,415	1,598
Taiwan	High	57	72	108	157	122	166	192	159	187	178	123	109	197	205	235	499	462	429	411	330	254	262	201
Middle East	na	5	9	15	10	12	10	11	9	5	9	14	9	9	14	20	20	16	21	23	16	19	38	29
Israel	High	4	9	7	5	9	9	10	3	4	5	11	8	7	11	17	11	12	16	13	7	7	17	14
Africa	na	19	18	11	11	11	18	7	10	10	7	13	20	15	4	13	9	8	6	6	3	4	4	1
South Africa	Upper middle	16	17	9	8	4	11	6	8	9	6	13	19	10	2	7	5	2	2	1	1	1	2	0
Australia and Oceania	na	48	41	59	77	97	136	149	69	53	58	40	37	46	37	31	33	28	27	21	24	19	25	24
Australia	High	44	39	57	73	93	131	142	65	51	53	37	33	39	33	23	27	22	19	17	19	16	22	22
New Zealand	High	4	2	2	3	4	5	6	4	2	5	3	5	8	4	8	6	6	8	5	5	3	2	2
Unclassified	na	7	159	83	14	7	0	6	31	9	7	3	4	26	9	14	46	3	2	20	1	1	1	1

na = not applicable, metric not calculated at this level.

EU = European Union; UK = United Kingdom.

^a The United Kingdom was a part of the EU for data purposes from 1973 to 2019.^b Beginning in 2020, the United Kingdom was no longer a member of the EU.**Note(s):**

International Patent Documentation (INPADOC) patent families across all patent offices covered in the Worldwide Patent Statistical Database (PATSTAT) are counted according to the year of the first granted patent in the patent family. Patent families are allocated according to patent inventorship information found on the priority patent of the INPADOC patent families. To account for missing ownership information in PATSTAT for some offices, a method designed by de Rassenfosse et al. (2013) is used to fill missing information on priority patents using information in successive filings within the families. Priority patents not indexed in PATSTAT are replaced by the next utility patent(s) in the families according to filing dates. Patent families are fractionally allocated among regions, countries, or economies based on the proportion of residences of all named inventors. Patents are classified under the World Intellectual Property Organization (WIPO) classification of patents, which classifies International Patent Classification (IPC) codes under 35 technical fields. IPC reformed codes take into account changes that were made to the WIPO classification in 2006 under the eighth version of the classification and were used to prepare these data. China includes Hong Kong. Data were extracted in June 2021. Because of data coverage issues for some patent offices in PATSTAT, statistics for some countries may be underestimated partially for some years or across the whole trend. Countries with identified issues include India (missing data) and South Africa (no data for 2018). For Italy, because of data gaps regarding information on granted patents, patent applications are used instead, which slightly overestimates Italy's output and creates a small shift in year for which its output is accounted. As patent authorities become more involved with the European Patent Organisation, these gaps should disappear in the future, strengthening the robustness of statistics for these countries.

Source(s):

National Center for Science and Engineering Statistics; Science-Metrix; PATSTAT, accessed October 2021.