

TABLE 31

**Domestic R&D paid for and performed by the company as a percentage of domestic net sales, by industry and company size: 2021**

(Millions of U.S. dollars and percent)

Industry and company size	NAICS code	Domestic R&D (US\$millions)	Percentage of domestic sales of R&D performers or funders <sup>a</sup>	Percentage of domestic sales of R&D performers <sup>b</sup>
All industries	21–23, 31–33, 42–81	527,804	4.0	4.1
Manufacturing industries	31–33	287,666	4.4	4.4
Food	311	4,963 - 4,968	D	D
Beverage and tobacco products	312	1,228	0.7	0.7
Textile, apparel, and leather products	313–16	818	1.1	1.1
Wood products	321	433 - 442	D	D
Paper	322	1,139	1.2	1.2
Printing and related support activities	323	196 - 205	i D	D
Petroleum and coal products	324	952	0.3	0.3
Chemicals	325	97,097	7.4	7.4
Basic chemicals	3251	2,559	0.8	0.8
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,291 - 1,320	i D	D
Pesticide, fertilizer, and other agricultural chemicals	3253	915 - 946	D	D
Pharmaceuticals and medicines	3254	88,524	14.2	14.2
Soap, cleaning compound, and toilet preparations	3256	2,531	2.0	2.0
Paint, coating, adhesive, and other chemicals	3255, 3259	1,242 - 1,252	D	D
Plastics and rubber products	326	2,961	1.3	1.3
Nonmetallic mineral products	327	1,503	2.8	3.1
Primary metals	331	887 - 890	D	D
Fabricated metal products	332	3,879	1.0	1.0
Machinery	333	16,726	3.9	3.9
Agricultural implement	33311	1,799 - 1,807	D	D
Semiconductor machinery	333242	5,182	17.4	17.4
Engine, turbine, and power transmission equipment	3336	1,239 - 1,246	D	D
Other machinery	other 333	8,499	2.9	2.9
Computer and electronic products	334	94,211	12.1	12.1
Communications equipment	3342	11,339	10.9	11.0
Semiconductor and other electronic components	3344	45,516	19.6	19.6
Navigational, measuring, electromedical, and control instruments	3345	10,014	6.4	6.4
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	2,837	17.1	17.1
Search, detection, navigation, guidance, aeronautical, and nautical system and instruments	334511	2,109	4.6	4.6
Other measuring and controlling devices	other 3345	5,068	5.4	5.4
Other computer and electronic products	other 334	27,342	9.6	9.6
Electrical equipment, appliances, and components	335	5,007	3.2	3.3
Transportation equipment	336	34,405	3.4	3.4
Motor vehicles, bodies, trailers, and parts	3361–63	22,754	3.7	D
Aerospace products and parts	3364	9,900	3.2	3.2
Aircraft, aircraft engine, and aircraft parts	336411–13	9,293	3.1	3.1
Guided missile, space vehicle, and related parts	336414–15, 336419	608	5.4	5.4
Military armored vehicle, tank, and tank components	336992	20 - 24	D	D

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Other transportation	other 336	1,726 - 1,731	D	D
Furniture and related products	337	423	1.0	1.1
Miscellaneous	339	20,822	3.7	3.7
Medical equipment and supplies	3391	18,204	4.2	4.2
Other miscellaneous manufacturing	3399	2,618	1.9	1.9
Nonmanufacturing industries	21-23, 42-81	240,138	3.7	3.8
Mining, quarrying, oil and gas extraction, and support activities	21	1,077 - 1,151	D	D
Utilities	22	133 - 17,961	D	D
Wholesale trade	42	1,661 - 1,770	i D	D
Electronic shopping and electronic auctions	454111-12	5,931 - 24,034	i D	D
Transportation and warehousing	48-49	7,198 - 7,200	D	D
Information	51	146,488	8.6	8.6
Publishing	511	38,521	12.6	12.7
Newspaper, periodical, book, and directory publishers	5111	81	4.0	4.3
Software publishers	5112	38,441	12.7	12.7
Telecommunications	517	3,736 - 3,805	D	D
Data processing, hosting, and related services	518	44,585	7.9	7.9
Other information	other 51	59,577 - 59,647	D	D
Finance and insurance	52	20,902	1.4	1.6
Real estate and rental and leasing	53	2,095 - 2,097	D	D
Lessors of nonfinancial intangible assets (except copyrighted works)	533	5 - 8	D	D
Other real estate and rental and leasing	other 53	2,087 - 2,091	D	D
Professional, scientific, and technical services	54	32,083	6.6	6.7
Architectural, engineering, and related services	5413	2,553	3.3	3.3
Computer systems design and related services	5415	17,188	8.6	8.6
Scientific research and development services	5417	6,123	7.4	7.4
Research and development in nanotechnology	541713	154	36.4	58.2
Research and development in biotechnology (except nanobiotechnology)	541714	1,664	6.1	6.1
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	4,266	7.9	7.9
Research and development in the social sciences and humanities	541720	38	2.7	2.7
Other professional, scientific, and technical services	other 54	6,218	5.0	5.0
Health care services	621-23	1,965 - 2,043	D	D
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	2,501 - 3,136	D	D
All companies (number of domestic employees)	-	527,804	4.0	4.1
Small companies				

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10–19 <sup>c</sup>	–	4,258	11.9		12.7	
20–49	–	12,626	12.1		12.5	
Medium companies						
50–99	–	12,488	8.5		8.7	
100–249	–	20,030	5.3		5.4	
Large companies						
250–499	–	20,574	5.5		5.7	
500–999	–	23,655	4.7		4.9	
1,000–4,999	–	83,609	4.2		4.2	
5,000–9,999	–	53,873	3.5		3.6	
10,000–24,999	–	84,057	3.8		3.8	
25,000 or more	–	212,634	3.7		3.8	

D = data withheld to avoid disclosing operations of individual companies; i = more than 50% of the estimate is a combination of imputation and reweighting to account for nonresponse.

NAICS = 2017 North American Industry Classification System.

<sup>a</sup> Statistics used for both the numerator and denominator in the calculation of these percentages are representative of companies located in the United States that performed or funded R&D.

<sup>b</sup> Statistics used for both the numerator and denominator in the calculation of these percentages are representative of companies located in the United States that performed R&D. The calculation of percentages in this column excludes R&D and sales of companies that fund R&D but do not perform R&D.

<sup>c</sup> The Business Enterprise Research and Development Survey does not include companies with fewer than 10 domestic employees.

**Note(s):**

Detail may not add to total because of rounding. Industry classification is based on the dominant business code for domestic R&D performance, where available. For companies that did not report business codes, the classification used for sampling was assigned. Unless indicated otherwise, statistics are representative of companies located in the United States that performed or funded \$50,000 or more of R&D and are not comparable with estimates published for years prior to 2018. An estimate range may be displayed in place of a single estimate to avoid disclosing operations of individual companies.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, Business Enterprise Research and Development Survey, 2021.