

Arizona

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**1997 Economic Census**

*Manufacturing*

Geographic Area Series



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U.S. Department of Commerce  
Economics and Statistics Administration  
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# Introduction to the Economic Census

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## PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

## ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

## RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

## GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

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required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

## **BASIS OF REPORTING**

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

## **DOLLAR VALUES**

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

## **AVAILABILITY OF ADDITIONAL DATA**

### **Reports in Print and Electronic Media**

All results of the 1997 Economic Census are available on the Census Bureau Internet site ([www.census.gov](http://www.census.gov)) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

### **Special Tabulations**

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division	301-457-4673
Service Sector Statistics Division	301-457-2668

## **HISTORICAL INFORMATION**

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

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## SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at [www.census.gov/econguide](http://www.census.gov/econguide). More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at [www.census.gov/econ/www/history.html](http://www.census.gov/econ/www/history.html).

## ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.



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# Manufacturing

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## SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

While logging and publishing are no longer in the scope of manufacturing, data for these industries are included in the manufacturing industry reports, but are not included in the manufacturing state, summary, and other reports.

## GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250

employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

## GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the

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component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

## **COMPARABILITY OF THE 1992 AND 1997 CENSUSES**

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the manufacturing data. This change affects data in the state reports and the general summary.

## **DISCLOSURE**

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

## **AVAILABILITY OF MORE FREQUENT ECONOMIC DATA**

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

**Table 1. Industry Statistics for the State: 1997**

[Includes data for industry groups and industries with 100 employees or more. For information on geographic areas followed by \* and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
<b>ARIZONA</b>													
<b>31-33</b>	<b>Manufacturing . . . .</b>	-	<b>4 917</b>	<b>1 370</b>	<b>193 616</b>	<b>6 753 601</b>	<b>121 994</b>	<b>247 489</b>	<b>3 000 055</b>	<b>26 898 948</b>	<b>15 878 330</b>	<b>43 030 348</b>	<b>2 504 585</b>
311	Food mfg . . . . .	1	243	67	8 576	215 806	6 026	11 933	127 060	1 002 607	1 511 895	2 523 096	101 437
3111	Animal food mfg . . . . .	1	12	4	315	10 505	210	475	6 448	94 380	210 580	305 836	3 296
31111	Animal food mfg . . . . .	1	12	4	315	10 505	210	475	6 448	94 380	210 580	305 836	3 296
311111	Dog & cat food mfg . . . . .	-	4	2	c	D	D	D	D	D	D	D	D
311119	Other animal food mfg . . . . .	7	8	2	c	D	D	D	D	D	D	D	D
3112	Grain & oilseed milling . . . . .	9	6	2	142	3 365	104	227	2 313	12 169	46 904	61 796	D
3114	Fruit & vegetable preserving & specialty food mfg . . . . .	7	21	6	576	13 023	428	767	7 150	78 443	60 484	138 984	4 298
31141	Frozen food mfg . . . . .	-	3	1	c	D	D	D	D	D	D	D	372
311412	Frozen specialty food mfg . . . . .	-	3	1	c	D	D	D	D	D	D	D	372
31142	Fruit & vegetable canning, pickling, & drying . . . . .	8	18	5	e	D	D	D	D	D	D	D	3 926
311421	Fruit & vegetable canning . . . . .	6	12	3	c	D	D	D	D	D	D	D	D
311422	Specialty canning . . . . .	9	6	2	c	D	D	D	D	D	D	D	D
3115	Dairy product mfg . . . . .	-	13	9	1 656	54 769	828	2 024	27 573	364 958	546 221	913 656	65 059
31151	Dairy product (except frozen) mfg . . . . .	-	11	8	g	D	D	D	D	D	D	D	D
311511	Fluid milk mfg . . . . .	-	6	5	940	33 321	381	966	14 658	102 192	251 280	357 757	D
311513	Cheese mfg . . . . .	-	3	1	c	D	D	D	D	D	D	D	D
311514	Dry, condensed, & evaporated dairy product mfg . . . . .	-	2	2	f	D	D	D	D	D	D	D	D
3116	Meat product mfg . . . . .	-	25	8	1 487	33 777	1 289	3 000	26 461	58 049	431 174	490 396	8 175
31161	Animal slaughtering & processing . . . . .	-	25	8	1 487	33 777	1 289	3 000	26 461	58 049	431 174	490 396	8 175
311611	Animal (except poultry) slaughtering . . . . .	-	13	3	g	D	D	D	D	D	D	D	D
311612	Meat processed from carcasses . . . . .	-	8	2	159	3 670	126	202	2 092	7 550	18 004	25 785	611
311613	Rendering & meat byproduct processing . . . . .	9	3	3	c	D	D	D	D	D	D	D	D
3118	Bakeries & tortilla mfg . . . . .	1	118	28	3 271	72 362	2 226	3 825	40 026	239 709	134 172	375 072	8 488
31181	Bread & bakery product mfg . . . . .	2	97	22	2 334	55 009	1 464	2 567	29 059	169 573	81 862	251 441	5 817
311811	Retail bakeries . . . . .	6	54	3	357	4 157	229	248	2 104	9 794	6 722	16 533	501
311812	Commercial bakeries . . . . .	2	39	19	1 966	50 578	1 226	2 301	26 730	159 001	74 333	233 323	5 256
31182	Cookie, cracker, & pasta mfg . . . . .	-	6	1	e	D	D	D	D	D	D	D	934
311823	Dry pasta mfg . . . . .	-	2	1	e	D	D	D	D	D	D	D	D
31183	Tortilla mfg . . . . .	-	15	5	f	D	D	D	D	D	D	D	1 737
311830	Tortilla mfg . . . . .	-	15	5	f	D	D	D	D	D	D	D	1 737
3119	Other food mfg . . . . .	1	33	10	1 063	27 114	886	1 552	16 449	149 017	80 223	229 060	10 403
31191	Snack food mfg . . . . .	-	10	4	582	16 067	495	905	10 069	120 373	46 538	166 613	7 727
311919	Other snack food mfg . . . . .	-	9	3	f	D	D	D	D	D	D	D	7 727
31199	All other food mfg . . . . .	4	12	4	407	9 636	343	587	5 843	24 832	29 862	54 781	2 449
311991	Perishable prepared food mfg . . . . .	4	5	2	275	5 917	221	314	3 439	18 791	21 652	40 507	2 002
311999	All other miscellaneous food mfg . . . . .	5	7	2	132	3 719	122	273	2 404	6 041	8 210	14 274	447
312	Beverage & tobacco product mfg . . . . .	-	41	16	1 754	48 366	759	1 528	16 647	187 824	396 474	582 678	26 388
3121	Beverage mfg . . . . .	-	41	16	1 754	48 366	759	1 528	16 647	187 824	396 474	582 678	26 388
31211	Soft drink & ice mfg . . . . .	-	28	15	1 687	47 267	714	1 486	15 840	181 435	390 984	570 863	25 946
312111	Soft drink mfg . . . . .	-	10	9	1 331	39 476	531	1 095	12 377	157 539	384 100	540 245	23 221
312112	Bottled water mfg . . . . .	-	4	3	149	3 873	48	105	1 620	7 841	2 824	10 569	348
312113	Ice mfg . . . . .	1	14	3	207	3 918	135	286	1 843	16 055	4 060	20 049	2 377
313	Textile mills . . . . .	-	29	3	592	12 004	536	1 139	10 155	29 421	85 805	115 065	2 535
3131	Fiber, yarn, & thread mills . . . . .	-	2	2	e	D	D	D	D	D	D	D	D
31311	Fiber, yarn, & thread mills . . . . .	-	2	2	e	D	D	D	D	D	D	D	D
313112	Yarn texturing, throwing, & twisting mills . . . . .	-	2	2	e	D	D	D	D	D	D	D	D
3132	Fabric mills . . . . .	2	9	1	c	D	D	D	D	D	D	D	D
31321	Broadwoven fabric mills . . . . .	2	8	1	118	2 475	101	186	2 111	6 372	7 078	13 324	290
313210	Broadwoven fabric mills . . . . .	2	8	1	118	2 475	101	186	2 111	6 372	7 078	13 324	290

**Table 1. Industry Statistics for the State: 1997—Con.**

[Includes data for industry groups and industries with 100 employees or more. For information on geographic areas followed by \* and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
<b>31-33</b>	<b>ARIZONA—Con.</b>												
	<b>Manufacturing—Con.</b>												
314	Textile product mills.....	4	100	15	1 168	23 685	929	1 683	14 997	59 794	42 902	102 223	3 322
3141	Textile furnishings mills....	4	46	1	229	3 734	190	327	2 330	11 235	10 426	21 541	141
31412	Curtain & linen mills.....	4	44	1	c	D	D	D	D	D	D	D	D
314121	Curtain & drapery mills .....	4	34	—	151	2 297	123	213	1 403	5 979	3 960	9 846	83
3149	Other textile product mills..	4	54	14	939	19 951	739	1 356	12 667	48 559	32 476	80 682	3 181
31491	Textile bag & canvas mills .....	6	23	5	380	10 061	309	569	5 960	13 111	12 112	24 937	1 346
314912	Canvas & related product mills .....	6	18	4	338	9 534	273	517	5 581	12 061	11 099	22 907	1 311
31499	All other textile product mills .....	3	31	9	559	9 890	430	787	6 707	35 448	20 364	55 745	1 835
314999	All other miscellaneous textile product mills ..	3	29	8	e	D	D	D	D	D	D	D	D
315	Apparel mfg .....	3	83	15	1 642	23 302	1 211	2 117	16 048	29 947	34 551	67 224	1 511
3152	Cut & sew apparel mfg ....	5	59	12	g	D	D	D	D	D	D	D	D
31521	Cut & sew apparel contractors .....	6	27	4	e	D	D	D	D	D	D	D	301
315212	Women's, girls', & infants' cut & sew apparel contractors ..	7	24	4	258	3 082	235	369	2 520	4 600	1 285	5 854	267
31522	Men's & boys' cut & sew apparel mfg .....	4	9	3	178	2 202	157	202	1 763	3 913	2 848	7 147	D
315228	Men's & boys' cut & sew other outerwear mfg .....	4	5	2	118	1 535	102	154	1 184	2 971	1 930	5 294	88
31523	Women's & girls' cut & sew apparel mfg .....	5	22	5	715	9 870	399	740	5 529	9 956	13 214	25 709	494
315231	Women's & girls' cut/ sew lingerie & nightwear mfg .....	—	2	2	c	D	D	D	D	D	D	D	D
315232	Women's & girls' cut & sew blouse & shirt mfg .....	6	8	2	443	5 791	144	277	2 202	3 631	11 596	17 949	D
3159	Apparel accessories & other apparel mfg .....	1	23	2	443	7 599	375	734	5 795	10 384	16 482	26 684	587
31599	Apparel accessories & other apparel mfg .....	1	23	2	443	7 599	375	734	5 795	10 384	16 482	26 684	587
315991	Hat, cap, & millinery mfg .....	—	3	1	e	D	D	D	D	D	D	D	D
315999	Other apparel accessories & other apparel mfg .....	1	19	1	165	3 250	124	199	2 110	7 947	9 012	16 810	D
316	Leather & allied product mfg .	1	25	2	208	4 503	156	270	2 248	14 863	10 722	26 020	111
3169	Other leather & allied product mfg .....	1	19	1	158	3 959	112	220	1 853	13 689	9 502	23 639	77
31699	Other leather & allied product mfg .....	1	19	1	158	3 959	112	220	1 853	13 689	9 502	23 639	77
321	Wood product mfg .....	1	204	86	7 861	178 093	6 637	12 934	130 762	389 558	553 520	947 117	14 893
3211	Sawmills & wood preservation .....	1	15	6	505	11 774	463	957	10 398	18 820	38 629	60 895	2 194
32111	Sawmills & wood preservation .....	1	15	6	505	11 774	463	957	10 398	18 820	38 629	60 895	2 194
321113	Sawmills .....	1	13	5	e	D	D	D	D	D	D	D	D
3212	Veneer, plywood, & engineered wood product mfg .....	2	32	20	1 453	34 630	1 200	2 478	24 326	73 146	104 648	177 309	2 750
32121	Veneer, plywood, & engineered wood product mfg .....	2	32	20	1 453	34 630	1 200	2 478	24 326	73 146	104 648	177 309	2 750
321214	Truss mfg .....	1	29	20	1 423	33 863	1 175	2 434	23 745	70 384	101 924	171 750	2 393
3219	Other wood product mfg ...	—	157	60	5 903	131 689	4 974	9 499	96 038	297 592	410 243	708 913	9 949
32191	Millwork .....	1	79	32	1 835	38 099	1 491	2 623	27 773	70 027	117 819	189 410	4 216
321911	Wood window & door mfg .....	1	35	14	855	20 203	692	1 207	14 030	37 602	39 673	79 416	2 063
321912	Cut stock, resawing lumber, & planing....	—	5	2	197	3 510	172	291	2 699	6 066	40 381	46 095	D
321918	Other millwork (including flooring) ...	1	39	16	783	14 386	627	1 125	11 044	26 359	37 765	63 899	D
32192	Wood container & pallet mfg .....	2	25	9	508	9 666	394	785	5 921	16 882	23 116	39 393	800
321920	Wood container & pallet mfg .....	2	25	9	508	9 666	394	785	5 921	16 882	23 116	39 393	800
32199	All other wood product mfg .....	—	53	19	3 560	83 924	3 089	6 091	62 344	210 683	269 308	480 110	4 933
321991	Manufactured home (mobile home) mfg ..	—	11	9	2 099	51 049	1 853	3 795	41 484	138 086	166 274	304 139	2 868
321992	Prefabricated wood building mfg .....	—	12	4	1 081	24 572	945	1 729	15 727	54 732	85 654	140 261	1 311
321999	All other miscellaneous wood product mfg ...	1	30	6	380	8 303	291	567	5 133	17 865	17 380	35 710	754

**Table 1. Industry Statistics for the State: 1997—Con.**

[Includes data for industry groups and industries with 100 employees or more. For information on geographic areas followed by \* and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
<b>31-33</b>	<b>ARIZONA—Con.</b>												
	<b>Manufacturing—Con.</b>												
322	Paper mfg . . . . .	—	39	26	2 948	105 276	2 347	5 100	71 182	317 538	409 832	727 185	32 099
3221	Pulp, paper, & paperboard mills . . . . .	—	2	2	f	D	D	D	D	D	D	D	D
32212	Paper mills . . . . .	—	2	2	f	D	D	D	D	D	D	D	D
322122	Newsprint mills . . . . .	—	1	1	f	D	D	D	D	D	D	D	D
3222	Converted paper product mfg . . . . .	—	37	24	g	D	D	D	D	D	D	D	D
32221	Paperboard container mfg . . . . .	—	17	13	1 027	34 070	776	1 684	20 591	78 999	126 628	203 975	6 454
322211	Corrugated & solid fiber box mfg . . . . .	—	13	10	880	30 047	653	1 439	17 997	70 406	118 845	187 856	6 208
322212	Folding paperboard box mfg . . . . .	2	2	2	c	D	D	D	D	D	D	D	D
32222	Paper bag & coated & treated paper mfg . . . . .	—	2	1	c	D	D	D	D	D	D	D	D
322224	Uncoated paper & multiwall bag mfg . . . . .	—	1	1	c	D	D	D	D	D	D	D	D
32223	Stationery product mfg . . . . .	—	8	5	e	D	D	D	D	D	D	D	D
322232	Envelope mfg . . . . .	—	3	2	e	D	D	D	D	D	D	D	D
32229	Other converted paper product mfg . . . . .	—	10	5	791	27 959	662	1 513	18 645	111 347	107 300	217 860	13 299
322291	Sanitary paper product mfg . . . . .	1	4	4	c	D	D	D	D	D	D	D	D
322299	All other converted paper product mfg . . . . .	—	6	1	f	D	D	D	D	D	D	D	D
323	Printing & related support activities . . . . .	1	703	113	9 222	245 125	6 624	12 082	152 741	529 704	318 230	848 607	54 813
3231	Printing & related support activities . . . . .	1	703	113	9 222	245 125	6 624	12 082	152 741	529 704	318 230	848 607	54 813
32311	Printing . . . . .	2	636	100	8 122	213 136	5 792	10 477	130 421	469 082	307 887	777 463	51 847
323110	Commercial lithographic printing . . . . .	1	278	60	4 329	119 106	2 962	5 601	71 880	252 810	163 696	416 949	34 220
323111	Commercial gravure printing . . . . .	1	7	2	188	9 496	148	335	7 119	16 093	15 775	32 144	1 765
323112	Commercial flexographic printing . . . . .	1	10	2	188	4 962	148	269	3 202	7 897	9 781	17 581	1 172
323113	Commercial screen printing . . . . .	3	78	9	738	14 329	552	886	7 792	29 033	22 640	51 587	3 869
323114	Quick printing . . . . .	2	168	9	1 286	28 119	962	1 406	17 456	67 311	33 964	101 253	3 396
323116	Manifold business form printing . . . . .	—	23	9	644	18 905	459	919	12 144	55 348	36 447	91 845	5 042
323118	Blankbook, looseleaf binder, & device mfg . . . . .	4	8	5	302	7 515	261	602	5 031	15 120	8 316	23 147	350
323119	Other commercial printing . . . . .	3	50	2	318	6 861	202	294	3 497	17 057	12 639	29 921	1 595
32312	Support activities for printing . . . . .	1	67	13	1 100	31 989	832	1 605	22 320	60 622	10 343	71 144	2 966
323121	Tradebinding & related work . . . . .	3	20	6	380	8 994	316	626	6 272	15 573	3 853	19 447	1 115
323122	Prepress services . . . . .	1	47	7	720	22 995	516	979	16 048	45 049	6 490	51 697	1 851
324	Petroleum & coal products mfg . . . . .	5	22	1	298	11 684	210	444	7 279	31 039	75 597	107 810	2 430
3241	Petroleum & coal products mfg . . . . .	5	22	1	298	11 684	210	444	7 279	31 039	75 597	107 810	2 430
32412	Asphalt paving, roofing, & saturated materials mfg . . . . .	6	18	1	259	10 134	182	384	6 409	24 910	64 470	89 606	D
324121	Asphalt paving mixture & block mfg . . . . .	6	11	1	211	8 266	148	314	5 203	17 052	50 481	67 821	D
325	Chemical mfg . . . . .	—	174	51	6 666	190 246	4 789	9 211	105 016	1 383 957	667 119	2 039 246	63 519
3251	Basic chemical mfg . . . . .	1	22	9	887	26 373	453	881	10 729	100 226	75 684	175 128	29 259
32512	Industrial gas mfg . . . . .	—	7	4	152	5 705	107	236	3 863	49 796	14 701	62 760	16 761
325120	Industrial gas mfg . . . . .	—	7	4	152	5 705	107	236	3 863	49 796	14 701	62 760	16 761
32518	Other basic inorganic chemical mfg . . . . .	—	8	2	424	11 356	129	228	2 726	19 921	34 271	56 665	8 087
325188	All other basic inorganic chemical mfg . . . . .	—	8	2	424	11 356	129	228	2 726	19 921	34 271	56 665	8 087
32519	Other basic organic chemical mfg . . . . .	—	4	2	e	D	D	D	D	D	D	D	D
325199	All other basic organic chemical mfg . . . . .	—	4	2	e	D	D	D	D	D	D	D	D
3252	Resin, syn rubber, & artificial & syn fibers & filaments mfg . . . . .	4	7	1	160	4 037	129	286	2 878	15 302	9 511	24 301	1 187
32521	Resin & synthetic rubber mfg . . . . .	3	6	1	c	D	D	D	D	D	D	D	D
325211	Plastics material & resin mfg . . . . .	1	2	1	c	D	D	D	D	D	D	D	D

**Table 1. Industry Statistics for the State: 1997—Con.**

[Includes data for industry groups and industries with 100 employees or more. For information on geographic areas followed by \* and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
<b>31-33</b>	<b>ARIZONA—Con.</b>												
	<b>Manufacturing—Con.</b>												
325	Chemical mfg—Con.												
3253	Pesticide, fertilizer, & other agricultural chemical mfg . . . . .	2	15	6	332	11 559	196	363	4 952	36 925	59 475	95 816	2 909
32531	Fertilizer mfg . . . . .	1	8	3	199	6 517	129	264	3 468	19 798	46 382	65 591	1 866
325314	Fertilizer (mixing only) mfg . . . . .	—	3	2	159	5 462	96	194	2 616	13 512	42 836	55 837	D
32532	Pesticide & other agricultural chemical mfg . . . . .	4	7	3	133	5 042	67	99	1 484	17 127	13 093	30 225	1 043
325320	Pesticide & other agricultural chemical mfg . . . . .	4	7	3	133	5 042	67	99	1 484	17 127	13 093	30 225	1 043
3254	Pharmaceutical & medicine mfg . . . . .	—	24	11	1 250	45 764	915	1 765	26 571	267 108	155 790	415 835	13 064
32541	Pharmaceutical & medicine mfg . . . . .	—	24	11	1 250	45 764	915	1 765	26 571	267 108	155 790	415 835	13 064
325411	Medicinal & botanical mfg . . . . .	1	9	2	130	4 327	69	125	1 392	13 417	12 352	25 799	D
325412	Pharmaceutical preparation mfg . . . . .	—	9	7	1 033	39 467	794	1 540	23 968	246 037	136 537	375 635	11 500
3255	Paint, coating, & adhesive mfg . . . . .	4	32	4	216	6 067	127	218	2 865	33 856	40 616	73 471	1 730
32551	Paint & coating mfg . . . . .	5	24	3	172	4 650	107	186	2 564	28 557	35 121	62 161	1 546
325510	Paint & coating mfg . . . . .	5	24	3	172	4 650	107	186	2 564	28 557	35 121	62 161	1 546
3256	Soap, cleaning compound, & toilet preparation mfg . . . . .	—	36	7	2 380	56 677	1 859	3 443	35 103	844 651	207 494	1 045 495	6 235
32561	Soap & cleaning compound mfg . . . . .	8	23	4	c	D	D	D	D	D	D	D	1 310
325611	Soap & other detergent mfg . . . . .	7	9	2	c	D	D	D	D	D	D	D	971
32562	Toilet preparation mfg . . . . .	—	13	3	g	D	D	D	D	D	D	D	4 925
325620	Toilet preparation mfg . . . . .	—	13	3	g	D	D	D	D	D	D	D	4 925
3259	Other chemical product mfg . . . . .	1	38	13	1 441	39 769	1 110	2 255	21 918	85 889	118 549	209 200	9 135
32592	Explosives mfg . . . . .	—	3	3	f	D	D	D	D	D	D	D	D
325920	Explosives mfg . . . . .	—	3	3	f	D	D	D	D	D	D	D	D
32599	All other chemical product & preparation mfg . . . . .	3	29	8	404	11 193	239	426	5 989	47 388	39 109	86 399	3 509
325991	Custom compounding of purchased resin . . . . .	1	11	3	c	D	D	D	D	D	D	D	919
325998	All other miscellaneous chemical product & preparation mfg . . . . .	4	14	4	205	6 205	109	202	3 300	35 396	19 382	54 750	2 270
326	Plastics & rubber products mfg . . . . .	1	238	99	8 276	212 130	6 324	12 404	138 669	540 148	527 058	1 067 066	51 841
3261	Plastics product mfg . . . . .	1	198	80	7 261	183 866	5 601	10 958	122 898	473 032	483 933	957 302	48 164
32611	Unsupported plastics film, sheet, & bag mfg . . . . .	—	11	4	315	9 386	217	453	6 460	21 768	29 198	49 808	3 216
326111	Unsupported plastics bag mfg . . . . .	1	6	2	c	D	D	D	D	D	D	D	D
32612	Plastics pipe, pipe fitting, & unsupported profile shape mfg . . . . .	3	16	8	390	10 934	320	689	7 673	31 636	49 110	80 577	2 924
326121	Unsupported plastics profile shape mfg . . . . .	2	13	5	198	5 315	152	307	3 161	12 314	10 851	23 140	1 057
326122	Plastics pipe & pipe fitting mfg . . . . .	4	3	3	192	5 619	168	382	4 512	19 322	38 259	57 437	1 867
32614	Polystyrene foam product mfg . . . . .	5	10	4	307	7 695	277	595	6 247	22 456	26 356	48 336	1 946
326140	Polystyrene foam product mfg . . . . .	5	10	4	307	7 695	277	595	6 247	22 456	26 356	48 336	1 946
32616	Plastics bottle mfg . . . . .	—	7	5	365	8 962	275	411	5 121	27 953	23 349	50 004	D
326160	Plastics bottle mfg . . . . .	—	7	5	365	8 962	275	411	5 121	27 953	23 349	50 004	D
32619	Other plastics product mfg . . . . .	1	141	57	5 744	143 624	4 405	8 646	95 411	361 148	345 912	710 525	35 081
326191	Plastics plumbing fixture mfg . . . . .	—	16	6	f	D	D	D	D	D	D	D	D
326199	All other plastics product mfg . . . . .	1	123	51	5 212	129 921	4 088	7 965	88 331	326 554	321 490	650 714	34 145
3262	Rubber product mfg . . . . .	1	40	19	1 015	28 264	723	1 446	15 771	67 116	43 125	109 764	3 677
32621	Tire mfg . . . . .	1	14	3	154	3 810	111	263	2 311	12 364	10 957	23 069	607
326212	Tire retreading . . . . .	1	13	3	c	D	D	D	D	D	D	D	D
32622	Rubber & plastics hoses & belting mfg . . . . .	—	5	4	136	2 810	113	237	1 906	11 825	10 977	22 644	690
326220	Rubber & plastics hoses & belting mfg . . . . .	—	5	4	136	2 810	113	237	1 906	11 825	10 977	22 644	690
32629	Other rubber product mfg . . . . .	1	21	12	725	21 644	499	946	11 554	42 927	21 191	64 051	2 380
326291	Rubber product mfg for mechanical use . . . . .	2	5	4	191	7 593	145	276	3 926	13 415	5 920	19 253	1 176
326299	All other rubber product mfg . . . . .	1	16	8	534	14 051	354	670	7 628	29 512	15 271	44 798	1 204

**Table 1. Industry Statistics for the State: 1997—Con.**

[Includes data for industry groups and industries with 100 employees or more. For information on geographic areas followed by \* and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

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			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
	<b>ARIZONA—Con.</b>												
<b>31-33</b>	<b>Manufacturing—Con.</b>												
327	Nonmetallic mineral product mfg .....	1	262	102	7 106	200 717	5 176	10 346	134 517	636 492	503 916	1 130 520	61 013
3271	Clay product & refractory mfg .....	1	55	12	839	19 219	617	1 136	11 182	40 457	22 416	64 005	2 254
32711	Pottery, ceramics, & plumbing fixture mfg ...	1	38	9	603	12 608	439	801	6 626	29 691	14 366	45 032	1 132
327112	Vitreous china, fine earthenware, & other pottery product mfg ..	2	35	7	e	D	D	D	D	D	D	D	D
327113	Porcelain electrical supply mfg .....	—	3	2	c	D	D	D	D	D	D	D	D
32712	Clay building material & refractories mfg .....	2	17	3	236	6 611	178	335	4 556	10 766	8 050	18 973	1 122
327121	Brick & structural clay tile mfg .....	—	2	1	c	D	D	D	D	D	D	D	D
3272	Glass & glass product mfg .	2	35	9	515	13 785	389	696	8 468	39 387	24 595	63 416	2 265
32721	Glass & glass product mfg .....	2	35	9	515	13 785	389	696	8 468	39 387	24 595	63 416	2 265
327215	Glass product mfg made of purchased glass .....	1	28	8	463	12 588	343	628	7 510	34 632	21 372	55 451	1 843
3273	Cement & concrete product mfg .....	1	131	66	4 921	144 514	3 499	7 102	97 168	481 101	375 661	846 030	51 573
32731	Cement mfg .....	—	2	2	e	D	D	D	D	D	D	D	D
327310	Cement mfg .....	—	2	2	e	D	D	D	D	D	D	D	D
32732	Ready-mix concrete mfg.	2	63	31	2 517	68 817	1 768	3 346	49 576	182 546	182 847	366 048	24 715
327320	Ready-mix concrete mfg .....	2	63	31	2 517	68 817	1 768	3 346	49 576	182 546	182 847	366 048	24 715
32733	Concrete pipe, brick, & block mfg .....	—	32	19	f	D	D	D	D	D	D	D	D
327331	Concrete block & brick mfg .....	1	24	14	613	18 442	383	867	9 960	58 152	48 452	104 807	4 993
327332	Concrete pipe mfg ....	—	8	5	e	D	D	D	D	D	D	D	D
32739	Other concrete product mfg .....	—	34	14	1 188	33 159	854	1 730	20 456	84 291	64 874	149 698	6 473
327390	Other concrete product mfg .....	—	34	14	1 188	33 159	854	1 730	20 456	84 291	64 874	149 698	6 473
3274	Lime & gypsum product mfg .....	—	5	4	220	8 146	180	411	6 414	28 571	31 730	60 305	1 561
32741	Lime mfg .....	—	2	2	c	D	D	D	D	D	D	D	D
327410	Lime mfg .....	—	2	2	c	D	D	D	D	D	D	D	D
3279	Other nonmetallic mineral product mfg .....	3	36	11	611	15 053	491	1 001	11 285	46 976	49 514	96 764	3 360
32799	All other nonmetallic mineral product mfg ...	3	35	11	f	D	D	D	D	D	D	D	D
327991	Cut stone & stone product mfg .....	6	13	1	c	D	D	D	D	D	D	D	D
327992	Ground or treated mineral & earth mfg ..	2	6	4	139	3 971	113	253	2 684	12 711	17 024	29 661	541
327999	All other miscellaneous nonmetallic mineral product mfg .....	3	14	5	315	7 165	253	490	5 707	24 289	26 608	51 265	2 434
331	Primary metal mfg .....	—	59	30	7 037	246 120	5 566	11 702	175 921	670 502	2 074 272	2 797 609	80 337
3311	Iron & steel mills & ferroalloy mfg .....	—	3	1	c	D	D	D	D	D	D	D	D
33111	Iron & steel mills & ferroalloy mfg .....	—	3	1	c	D	D	D	D	D	D	D	D
331111	Iron & steel mills .....	—	3	1	c	D	D	D	D	D	D	D	D
3312	Steel product mfg from purchased steel .....	—	6	2	e	D	D	D	D	D	D	D	D
33121	Iron & steel pipes & tubes mfg from purchased steel .....	—	2	1	c	D	D	D	D	D	D	D	D
331210	Iron & steel pipes & tubes mfg from purchased steel .....	—	2	1	c	D	D	D	D	D	D	D	D
33122	Rolling & drawing of purchased steel .....	—	4	1	c	D	D	D	D	D	D	D	D
331222	Steel wire drawing ....	—	4	1	c	D	D	D	D	D	D	D	D
3313	Alumina & aluminum production & processing ...	—	4	4	1 226	41 089	965	2 339	27 680	168 911	90 131	258 827	D
33131	Alumina & aluminum production & processing .....	—	4	4	1 226	41 089	965	2 339	27 680	168 911	90 131	258 827	D
331316	Aluminum extruded product mfg .....	—	4	4	1 226	41 089	965	2 339	27 680	168 911	90 131	258 827	D



**Table 1. Industry Statistics for the State: 1997—Con.**

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NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
<b>ARIZONA—Con.</b>													
<b>31-33</b>	<b>Manufacturing—Con.</b>												
331	Primary metal mfg—Con.												
3314	Nonferrous metal (except aluminum) production & processing.....	-	19	12	3 471	145 038	2 678	5 891	104 896	356 965	1 812 492	2 215 475	63 364
33141	Nonferrous metal (except aluminum) smelting & refining.....	-	9	8	3 225	135 965	2 495	5 521	99 169	342 091	1 778 021	2 164 644	D
331411	Primary smelting & refining of copper....	-	5	5	h	D	D	D	D	D	D	D	D
331419	Other nonferrous metal primary smelting & refining.....	3	4	3	c	D	D	D	D	D	D	D	D
33149	Other nonferrous metal rolling, drawing, extruding, & alloying ...	1	9	3	c	D	D	D	D	D	D	D	D
331491	Other nonferrous metal rolling, drawing, & extruding.....	-	5	2	142	5 149	98	183	2 921	9 033	28 093	38 816	D
3315	Foundries.....	-	27	11	1 759	43 884	1 522	2 658	33 854	91 757	57 771	154 426	6 098
33151	Ferrous metal foundries .	-	10	4	735	21 696	617	1 188	16 480	45 315	35 736	78 597	4 618
331512	Steel investment foundries.....	-	5	2	f	D	D	D	D	D	D	D	D
331513	Steel foundries (except investment).....	-	3	2	c	D	D	D	D	D	D	D	D
33152	Nonferrous metal foundries.....	-	17	7	1 024	22 188	905	1 470	17 374	46 442	22 035	75 829	1 480
331522	Nonferrous (except aluminum) die-casting foundries.....	-	2	1	f	D	D	D	D	D	D	D	D
331525	Copper foundries (except die-casting) ..	-	8	3	166	4 263	135	275	2 990	6 446	4 631	10 951	250
331528	Other nonferrous foundries (except die-casting) ..	-	3	1	c	D	D	D	D	D	D	D	D
332	Fabricated metal product mfg.....	1	835	210	20 292	628 362	14 649	29 774	356 162	1 640 810	1 124 621	2 764 591	95 251
3321	Forging & stamping.....	1	32	15	832	28 551	634	1 278	18 128	72 336	74 329	146 295	4 975
33211	Forging & stamping.....	1	32	15	832	28 551	634	1 278	18 128	72 336	74 329	146 295	4 975
332114	Custom roll forming.....	-	5	5	180	4 653	128	230	2 927	15 277	35 111	50 696	473
332116	Metal stamping.....	2	21	10	625	23 000	485	1 003	14 532	55 250	37 443	92 000	4 347
3323	Architectural & structural metals mfg.....	-	225	67	7 390	206 523	5 181	10 760	112 426	469 853	437 008	919 064	19 381
33231	Plate work & fabricated structural product mfg ..	-	67	25	2 448	72 896	1 472	2 699	32 187	177 412	180 380	368 161	7 588
332311	Prefabricated metal building & component mfg.....	1	11	3	508	11 262	344	539	6 427	22 337	29 069	51 542	1 163
332312	Fabricated structural metal mfg.....	-	42	19	1 698	54 108	940	1 790	21 454	145 255	143 348	298 840	5 672
332313	Plate work mfg.....	1	14	3	242	7 526	188	370	4 306	9 820	7 963	17 779	753
33232	Ornamental & architectural metal products mfg.....	-	158	42	4 942	133 627	3 709	8 061	80 239	292 441	256 628	550 903	11 793
332321	Metal window & door mfg.....	-	29	12	1 812	45 320	1 214	2 729	26 093	106 710	103 534	210 194	3 151
332322	Sheet metal work mfg.....	1	77	22	2 167	65 342	1 682	3 643	37 847	131 049	117 530	251 204	7 023
332323	Ornamental & architectural metal work mfg.....	-	52	8	963	22 965	813	1 689	16 299	54 682	35 564	89 505	1 619
3324	Boiler, tank, & shipping container mfg.....	-	13	5	332	12 429	250	545	9 220	35 530	48 393	84 776	935
33243	Metal can, box, & other metal container (light gauge) mfg.....	-	5	3	213	8 567	161	362	6 650	24 351	43 888	69 104	533
332439	Other metal container mfg.....	-	4	2	c	D	D	D	D	D	D	D	D
3325	Hardware mfg.....	-	12	3	1 069	25 701	938	1 928	18 042	66 610	49 454	113 833	D
33251	Hardware mfg.....	-	12	3	1 069	25 701	938	1 928	18 042	66 610	49 454	113 833	D
332510	Hardware mfg.....	-	12	3	1 069	25 701	938	1 928	18 042	66 610	49 454	113 833	D
3326	Spring & wire product mfg ..	2	15	4	299	6 902	243	358	4 654	17 979	18 222	36 342	653
33261	Spring & wire product mfg.....	2	15	4	299	6 902	243	358	4 654	17 979	18 222	36 342	653
332618	Other fabricated wire product mfg.....	2	11	3	250	5 573	201	288	3 662	15 877	17 250	33 371	592
3327	Machine shops, turned product, & screw, nut, & bolt mfg.....	1	352	73	5 093	175 368	3 938	7 878	116 296	355 783	145 642	495 514	44 544
33271	Machine shops.....	2	314	56	3 826	134 003	2 927	5 716	87 152	253 814	104 486	353 336	26 003
332710	Machine shops.....	2	314	56	3 826	134 003	2 927	5 716	87 152	253 814	104 486	353 336	26 003
33272	Turned product & screw, nut, & bolt mfg.....	1	38	17	1 267	41 365	1 011	2 162	29 144	101 969	41 156	142 178	18 541
332721	Precision turned product mfg.....	1	31	13	982	32 097	780	1 789	23 280	75 299	30 183	104 524	16 657
332722	Bolt, nut, screw, rivet, & washer mfg.....	2	7	4	285	9 268	231	373	5 864	26 670	10 973	37 654	1 884

**Table 1. Industry Statistics for the State: 1997—Con.**

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NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
<b>31-33</b>	<b>ARIZONA—Con.</b>												
	<b>Manufacturing—Con.</b>												
332	Fabricated metal product mfg—Con.												
3328	Coating, engraving, heat treating, & allied activities.	2	97	23	1 677	44 230	1 307	2 398	28 763	96 597	30 978	128 187	5 624
33281	Coating, engraving, heat treating, & allied activities.....	2	97	23	1 677	44 230	1 307	2 398	28 763	96 597	30 978	128 187	5 624
332811	Metal heat treating....	1	10	4	210	6 656	164	299	4 399	16 030	4 586	20 788	2 200
332812	Metal coating/engraving (exc jewelry/silverware)/allied services.....	3	35	8	622	15 455	494	841	10 306	39 506	12 296	51 543	1 811
332813	Electroplating, plating, polishing, anodizing, & coloring.....	2	52	11	845	22 119	649	1 258	14 058	41 061	14 096	55 856	1 613
3329	Other fabricated metal product mfg.....	—	77	19	3 516	126 883	2 091	4 538	47 485	522 103	318 341	834 211	14 221
33291	Metal valve mfg.....	—	13	7	2 311	91 277	1 191	2 732	25 457	437 404	238 353	671 156	11 402
332912	Fluid power valve & hose fitting mfg.....	—	7	5	2 197	87 045	1 104	2 546	22 848	426 731	230 304	652 534	11 040
33299	All other fabricated metal product mfg.....	1	64	12	1 205	35 606	900	1 806	22 028	84 699	79 988	163 055	2 819
332994	Small arms mfg.....	—	8	1	287	7 006	260	573	5 595	31 592	12 640	43 703	330
332999	All other miscellaneous fabricated metal product mfg.....	1	44	7	745	22 969	521	976	12 872	41 130	59 802	100 979	1 408
333	Machinery mfg.....	1	316	93	10 588	312 211	7 349	13 701	171 924	898 126	734 682	1 627 438	61 726
3331	Agriculture, construction, & mining machinery mfg....	—	25	7	1 885	45 657	1 621	3 194	32 329	168 453	131 402	299 956	6 436
33311	Agricultural implement mfg.....	—	10	2	g	D	D	D	D	D	D	D	5 011
333111	Farm machinery & equipment mfg.....	—	9	1	e	D	D	D	D	D	D	D	D
333112	Lawn & garden tractor & home lawn & garden equipment mfg.....	—	1	1	g	D	D	D	D	D	D	D	D
33312	Construction machinery mfg.....	1	5	3	c	D	D	D	D	D	D	D	781
333120	Construction machinery mfg.....	1	5	3	c	D	D	D	D	D	D	D	781
33313	Mining & oil & gas field machinery mfg.....	—	10	2	c	D	D	D	D	D	D	D	644
333131	Mining machinery & equipment mfg.....	—	8	2	144	5 489	75	153	1 846	13 552	19 426	32 961	D
3332	Industrial machinery mfg ..	1	56	19	2 167	74 992	1 139	2 267	35 785	228 093	155 351	379 427	26 416
33321	Sawmill & woodworking machinery mfg.....	—	4	3	114	3 179	86	133	1 724	6 213	5 194	11 776	230
333210	Sawmill & woodworking machinery mfg.....	—	4	3	114	3 179	86	133	1 724	6 213	5 194	11 776	230
33329	Other industrial machinery mfg.....	1	46	16	2 036	71 239	1 040	2 117	33 800	220 635	149 131	365 361	26 014
333293	Printing machinery & equipment mfg.....	3	4	2	c	D	D	D	D	D	D	D	D
333295	Semiconductor machinery mfg.....	—	17	8	1 436	52 849	667	1 426	23 784	181 281	122 123	300 956	23 617
333298	All other industrial machinery mfg.....	5	19	5	398	11 911	234	417	5 923	26 800	19 666	44 797	1 390
3333	Commercial & service industry machinery mfg ..	2	63	17	1 553	48 297	841	1 510	18 121	141 736	130 396	266 400	7 177
33331	Commercial & service industry machinery mfg.....	2	63	17	1 553	48 297	841	1 510	18 121	141 736	130 396	266 400	7 177
333313	Office machinery mfg ..	8	6	3	388	12 096	215	365	4 710	26 754	21 413	51 765	1 506
333314	Optical instrument & lens mfg.....	1	14	4	295	13 560	120	200	2 906	49 433	22 384	61 617	2 499
333319	Other commercial & service industry machinery mfg.....	—	25	9	714	18 865	406	770	8 446	55 959	79 527	136 290	2 413
3334	Ventilation, heating, AC, & commercial refrigeration equip mfg.....	—	22	7	1 385	35 798	1 013	2 077	21 423	93 876	103 890	202 037	3 867
33341	Ventilation, heating, AC, & commercial refrigeration equip mfg ..	—	22	7	1 385	35 798	1 013	2 077	21 423	93 876	103 890	202 037	3 867
333415	AC & warm air heating & commercial/ industrial refrig equip mfg.....	—	13	6	1 296	33 728	943	1 954	20 075	88 451	99 488	192 106	3 694

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			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
	<b>ARIZONA—Con.</b>												
<b>31-33</b>	<b>Manufacturing—Con.</b>												
333	Machinery mfg—Con.												
3335	Metalworking machinery mfg .....	2	98	26	1 748	59 949	1 271	2 395	38 196	123 093	52 837	168 967	9 965
33351	Metalworking machinery mfg .....	1	98	26	1 748	59 949	1 271	2 395	38 196	123 093	52 837	168 967	9 965
333511	Industrial mold mfg ...	2	25	7	442	18 590	333	636	12 161	38 400	16 054	50 342	3 809
333514	Special die & tool, die set, jig, & fixture mfg .	2	44	9	547	20 385	398	788	13 886	39 765	13 406	52 861	3 171
333515	Cutting tool & machine tool accessory mfg ..	4	22	6	381	10 003	264	490	6 342	18 494	8 892	27 314	2 027
333518	Other metalworking machinery mfg .....	6	3	2	287	8 517	206	335	4 160	21 816	11 102	30 369	300
3336	Engine, turbine, & power transmission equipment mfg .....	—	6	3	122	5 072	80	152	2 078	12 856	10 850	23 477	905
33361	Engine, turbine, & power transmission equipment mfg .....	—	6	3	122	5 072	80	152	2 078	12 856	10 850	23 477	905
3339	Other general-purpose machinery mfg .....	1	46	14	1 728	42 446	1 384	2 106	23 992	130 019	149 956	287 174	6 960
33391	Pump & compressor mfg .....	1	7	2	107	2 696	73	101	1 457	7 945	9 844	17 836	D
33392	Material handling equipment mfg .....	—	11	2	225	6 716	151	304	4 307	17 873	29 692	48 998	D
333922	Conveyor & conveying equipment mfg .....	—	3	2	c	D	D	D	D	D	D	D	D
33399	All other general-purpose machinery mfg .....	1	28	10	1 396	33 034	1 160	1 701	18 228	104 201	110 420	220 340	2 724
333991	Power-driven handtool mfg .....	—	4	1	f	D	D	D	D	D	D	D	408
333999	All other miscellaneous general-purpose machinery mfg .....	4	14	6	488	15 640	376	741	8 127	26 146	28 621	53 776	1 782
334	Computer & electronic product mfg .....	—	356	166	48 384	2 095 152	23 484	50 572	663 667	13 486 186	2 845 343	16 295 240	1 570 887
3341	Computer & peripheral equipment mfg .....	2	50	18	1 671	68 155	608	1 392	19 223	93 253	184 635	276 928	18 043
33411	Computer & peripheral equipment mfg .....	2	50	18	1 671	68 155	608	1 392	19 223	93 253	184 635	276 928	18 043
334111	Electronic computer mfg .....	8	11	3	c	D	D	D	D	D	D	D	2 001
334113	Computer terminal mfg .....	—	5	3	f	D	D	D	D	D	D	D	D
334119	Other computer peripheral equipment mfg .....	1	30	12	831	28 963	273	563	7 835	55 286	80 701	135 510	10 679
3342	Communications equipment mfg .....	1	47	22	6 976	182 722	2 750	5 198	76 190	728 132	322 735	1 061 930	42 899
33421	Telephone apparatus mfg .....	3	9	6	1 274	54 628	723	1 598	27 255	154 938	78 696	235 233	9 454
334210	Telephone apparatus mfg .....	3	9	6	1 274	54 628	723	1 598	27 255	154 938	78 696	235 233	9 454
33422	Radio & TV broadcasting & wireless communications equipment mfg .....	—	29	14	5 566	124 334	1 934	3 446	47 230	564 430	238 317	812 141	33 249
334220	Radio & TV broadcasting & wireless communications equipment mfg .....	—	29	14	5 566	124 334	1 934	3 446	47 230	564 430	238 317	812 141	33 249
33429	Other communications equipment mfg .....	3	9	2	136	3 760	93	154	1 705	8 764	5 722	14 556	196
334290	Other communications equipment mfg .....	3	9	2	136	3 760	93	154	1 705	8 764	5 722	14 556	196
3343	Audio & video equipment mfg .....	—	8	6	583	14 512	415	730	7 644	72 950	58 284	130 185	1 945
33431	Audio & video equipment mfg .....	—	8	6	583	14 512	415	730	7 644	72 950	58 284	130 185	1 945
334310	Audio & video equipment mfg .....	—	8	6	583	14 512	415	730	7 644	72 950	58 284	130 185	1 945
3344	Semiconductor & other electronic component mfg .....	—	157	80	28 164	1 272 048	16 054	36 047	436 288	10 560 513	1 573 133	12 098 035	1 442 397

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<b>31-33</b>	<b>ARIZONA—Con.</b>												
	<b>Manufacturing—Con.</b>												
334	Computer & electronic product mfg—Con.												
3344	Semiconductor & other electronic component mfg—Con.												
33441	Semiconductor & other electronic component mfg .....	—	157	80	28 164	1 272 048	16 054	36 047	436 288	10 560 513	1 573 133	12 098 035	1 442 397
334412	Bare printed circuit board mfg .....	—	40	19	3 320	92 463	2 596	5 405	61 286	310 284	179 148	482 267	44 338
334413	Semiconductor & related device mfg ...	—	47	26	18 070	957 374	8 493	19 831	243 066	9 701 750	668 781	10 329 715	1 346 376
334414	Electronic capacitor mfg .....	—	4	3	c	D	D	D	D	D	D	D	707
334416	Electronic coil, transformer, & other inductor mfg .....	—	13	8	390	7 554	324	584	4 335	15 476	10 756	26 172	D
334417	Electronic connector mfg .....	—	7	3	790	25 602	629	1 388	18 164	82 331	30 966	118 820	2 740
334418	Printed circuit assembly (electronic assembly) mfg .....	—	13	10	4 597	157 215	3 357	7 568	89 284	392 788	640 680	1 036 761	45 678
334419	Other electronic component mfg .....	2	31	10	717	24 252	506	974	16 054	40 522	33 721	78 030	2 082
3345	Navigational, measuring, medical, & control instruments mfg .....	—	83	35	10 497	534 848	3 346	6 514	114 009	1 914 545	637 672	2 544 021	63 630
33451	Navigational, measuring, medical, & control instruments mfg .....	—	83	35	10 497	534 848	3 346	6 514	114 009	1 914 545	637 672	2 544 021	63 630
334510	Electromedical & electrotherapeutic apparatus mfg .....	6	9	4	438	35 747	133	222	9 505	77 480	43 711	122 332	7 029
334511	Search, detection, navigation, & guidance instrument mfg .....	—	17	9	6 913	347 664	2 158	4 178	73 420	1 037 834	411 119	1 432 814	31 710
334512	Automatic environmental control mfg .....	1	5	2	c	D	D	D	D	D	D	D	D
334513	Industrial process control instrument mfg .....	—	15	5	g	D	D	D	D	D	D	D	14 252
334514	Totalizing fluid meter & counting device mfg .	2	2	1	c	D	D	D	D	D	D	D	D
334515	Electricity measuring & testing instrument mfg .....	2	14	5	387	19 924	260	464	10 768	26 304	27 163	53 519	5 438
334516	Analytical laboratory instrument mfg .....	1	9	2	170	7 553	50	104	1 736	18 661	17 319	36 555	810
334519	Other measuring & controlling device mfg .....	—	12	7	313	12 161	105	218	3 023	37 102	12 647	49 476	2 181
3346	Mfg & reproducing magnetic & optical media .	—	11	5	493	22 867	311	691	10 313	116 793	68 884	184 141	1 973
33461	Mfg & reproducing magnetic & optical media .....	—	11	5	493	22 867	311	691	10 313	116 793	68 884	184 141	1 973
334612	Prerecorded CD (except software), tape, & record reproducing .....	—	7	2	c	D	D	D	D	D	D	D	D
334613	Magnetic & optical recording media mfg .	—	3	2	c	D	D	D	D	D	D	D	1 369
335	Electrical equipment, appliance, & component mfg .....	—	90	30	4 322	130 723	2 866	5 791	69 701	401 145	490 482	924 869	28 872
3351	Electric lighting equipment mfg .....	1	25	5	600	16 986	391	724	6 980	33 062	25 667	59 025	1 440
33512	Lighting fixture mfg .....	1	25	5	600	16 986	391	724	6 980	33 062	25 667	59 025	1 440
335121	Residential electric lighting fixture mfg ...	3	12	2	218	4 212	169	305	2 670	8 117	4 274	12 496	192
335122	Commercial/industrial/institutional electric lighting fixture mfg ...	1	5	1	107	2 891	85	151	1 442	6 899	7 415	14 082	284
335129	Other lighting equipment mfg .....	—	8	2	275	9 883	137	268	2 868	18 046	13 978	32 447	964
3352	Household appliance mfg ..	—	4	2	e	D	D	D	D	D	D	D	D
33522	Major appliance mfg ....	—	3	2	c	D	D	D	D	D	D	D	D
335222	Household refrigerator & home freezer mfg..	—	1	1	c	D	D	D	D	D	D	D	D
3353	Electrical equipment mfg ..	6	27	8	e	D	D	D	D	D	D	D	D
33531	Electrical equipment mfg .....	6	27	8	e	D	D	D	D	D	D	D	D
335313	Switchgear & switchboard apparatus mfg .....	7	10	4	203	6 494	136	244	3 395	8 079	16 639	25 345	467
335314	Relay & industrial control mfg .....	3	11	2	128	3 116	73	102	1 248	5 739	3 973	9 786	190

**Table 1. Industry Statistics for the State: 1997—Con.**

[Includes data for industry groups and industries with 100 employees or more. For information on geographic areas followed by \* and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
<b>31-33</b>	<b>ARIZONA—Con.</b>												
	<b>Manufacturing—Con.</b>												
335	Electrical equipment, appliance, & component mfg—Con.												
3359	Other electrical equipment & component mfg .....	-	34	15	3 054	94 606	2 013	4 197	51 394	312 399	405 817	750 493	25 100
33592	Communication & energy wire & cable mfg .....	-	6	6	2 246	69 384	1 477	3 082	38 812	258 495	341 449	630 890	19 095
335929	Other communication & energy wire mfg ...	-	6	6	2 246	69 384	1 477	3 082	38 812	258 495	341 449	630 890	19 095
33593	Wiring device mfg .....	9	9	1	101	3 858	80	144	2 615	-958	7 824	7 004	612
33599	All other electrical equipment & component mfg .....	-	19	8	707	21 364	456	971	9 967	54 862	56 544	112 599	5 393
335999	All other miscellaneous electrical equipment & component mfg .....	-	18	8	f	D	D	D	D	D	D	D	D
336	Transportation equipment mfg .....	-	227	88	29 862	1 440 052	14 472	31 681	411 699	3 525 708	2 787 626	6 535 848	193 517
3361	Motor vehicle mfg .....	3	3	1	c	D	D	D	D	D	D	D	D
33611	Automobile & light duty motor vehicle mfg .....	3	3	1	c	D	D	D	D	D	D	D	D
336111	Automobile mfg .....	-	2	1	c	D	D	D	D	D	D	D	D
3362	Motor vehicle body & trailer mfg .....	2	36	6	588	13 601	504	963	9 688	31 462	43 482	76 258	1 749
33621	Motor vehicle body & trailer mfg .....	2	36	6	588	13 601	504	963	9 688	31 462	43 482	76 258	1 749
336211	Motor vehicle body mfg .....	2	11	3	342	8 694	296	621	6 142	21 584	27 104	49 944	D
336214	Travel trailer & camper mfg .....	2	18	2	c	D	D	D	D	D	D	D	826
3363	Motor vehicle parts mfg ...	1	85	32	7 777	217 500	5 709	10 614	108 546	629 664	693 912	1 329 078	57 710
33631	Motor vehicle gasoline engine & engine parts mfg .....	1	19	4	560	10 258	437	498	6 353	19 311	24 790	44 243	2 249
336312	Gasoline engine & engine parts mfg ....	-	14	3	517	9 252	400	445	5 588	17 193	23 414	40 762	2 070
33632	Motor vehicle electrical & electronic equipment mfg .....	1	13	8	1 747	29 977	1 586	3 000	23 192	89 166	84 207	173 959	4 156
336322	Other motor vehicle electrical & electronic equipment mfg .....	1	12	7	g	D	D	D	D	D	D	D	D
33633	Motor vehicle steering & suspension component (except spring) mfg ....	-	2	1	e	D	D	D	D	D	D	D	D
336330	Motor vehicle steering & suspension component (except spring) mfg .....	-	2	1	e	D	D	D	D	D	D	D	D
33634	Motor vehicle brake system mfg .....	-	3	1	c	D	D	D	D	D	D	D	61
336340	Motor vehicle brake system mfg .....	-	3	1	c	D	D	D	D	D	D	D	61
33635	Motor vehicle transmission & power train parts mfg .....	1	9	3	c	D	D	D	D	D	D	D	979
336350	Motor vehicle transmission & power train parts mfg .....	1	9	3	c	D	D	D	D	D	D	D	979
33636	Motor vehicle seating & interior trim mfg .....	3	5	4	588	15 245	472	858	7 916	38 954	35 955	75 302	D
336360	Motor vehicle seating & interior trim mfg ...	3	5	4	588	15 245	472	858	7 916	38 954	35 955	75 302	D
33637	Motor vehicle metal stamping .....	2	4	3	177	8 439	133	309	4 405	13 546	17 363	30 977	2 018
336370	Motor vehicle metal stamping .....	2	4	3	177	8 439	133	309	4 405	13 546	17 363	30 977	2 018
33639	Other motor vehicle parts mfg .....	-	30	8	4 051	136 430	2 551	4 935	58 261	438 676	503 490	945 222	44 560
336399	All other motor vehicle parts mfg .....	-	30	8	4 051	136 430	2 551	4 935	58 261	438 676	503 490	945 222	44 560
3364	Aerospace product & parts mfg .....	-	68	40	20 396	1 178 068	7 352	18 313	271 584	2 798 176	1 955 404	4 973 185	130 116
33641	Aerospace product & parts mfg .....	-	68	40	20 396	1 178 068	7 352	18 313	271 584	2 798 176	1 955 404	4 973 185	130 116
336411	Aircraft mfg .....	-	5	4	h	D	D	D	D	D	D	D	D
336412	Aircraft engine & engine parts mfg ....	-	19	16	7 113	399 182	2 376	5 803	117 476	1 470 339	746 350	2 118 710	64 023
336413	Other aircraft part & auxiliary equipment mfg .....	-	38	17	2 132	77 874	1 329	2 673	33 484	177 854	104 749	276 156	14 125
336414	Guided missile & space vehicle mfg ...	-	2	2	i	D	D	D	D	D	D	D	D

**Table 1. Industry Statistics for the State: 1997—Con.**

[Includes data for industry groups and industries with 100 employees or more. For information on geographic areas followed by \* and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
	<b>ARIZONA—Con.</b>												
<b>31-33</b>	<b>Manufacturing—Con.</b>												
336	Transportation equipment mfg—Con.												
3365	Railroad rolling stock mfg . . . . .	—	1	1	c	D	D	D	D	D	D	D	D
33651	Railroad rolling stock mfg . . . . .	—	1	1	c	D	D	D	D	D	D	D	D
336510	Railroad rolling stock mfg . . . . .	—	1	1	c	D	D	D	D	D	D	D	D
3366	Ship & boat building . . . . .	—	15	5	536	15 094	451	914	11 386	32 222	50 449	82 366	1 300
33661	Ship & boat building . . . . .	—	15	5	536	15 094	451	914	11 386	32 222	50 449	82 366	1 300
336612	Boat building . . . . .	—	14	5	f	D	D	D	D	D	D	D	D
3369	Other transportation equipment mfg . . . . .	—	19	3	326	7 559	262	437	3 920	12 658	32 696	42 328	1 316
33699	Other transportation equipment mfg . . . . .	—	19	3	326	7 559	262	437	3 920	12 658	32 696	42 328	1 316
336991	Motorcycle, bicycle, & parts mfg . . . . .	1	10	1	133	2 766	110	218	1 627	2 907	17 591	17 526	796
336999	All other transportation equipment mfg . . . . .	—	9	2	193	4 793	152	219	2 293	9 751	15 105	24 802	520
337	Furniture & related product mfg . . . . .	1	360	79	7 977	162 802	6 451	11 953	114 198	382 821	290 018	675 028	20 101
3371	Household & institutional furniture & kitchen cabinet mfg . . . . .	1	269	53	5 780	117 928	4 878	9 406	87 712	271 404	199 102	467 562	13 034
33711	Wood kitchen cabinet & counter top mfg . . . . .	1	132	24	1 957	44 327	1 529	2 854	28 074	124 276	58 870	183 083	2 490
337110	Wood kitchen cabinet & counter top mfg . . . . .	1	132	24	1 957	44 327	1 529	2 854	28 074	124 276	58 870	183 083	2 490
33712	Household & institutional furniture mfg . . . . .	1	137	29	3 823	73 601	3 349	6 552	59 638	147 128	140 232	284 479	10 544
337121	Upholstered household furniture mfg . . . . .	3	24	7	334	7 141	293	477	5 337	9 935	13 672	23 853	559
337122	Nonupholstered wood household furniture mfg . . . . .	1	87	14	2 835	50 725	2 499	5 011	42 700	100 803	99 530	198 021	6 659
337124	Metal household furniture mfg . . . . .	4	10	2	129	2 247	109	215	1 524	5 402	3 057	8 211	216
337125	Household furniture (except wood & metal) mfg . . . . .	—	3	2	c	D	D	D	D	D	D	D	D
337127	Institutional furniture mfg . . . . .	3	11	3	231	6 959	177	369	4 312	17 363	6 241	23 165	2 140
3372	Office furniture (including fixtures) mfg . . . . .	2	63	18	1 535	30 059	1 131	1 681	17 768	61 168	41 619	103 397	3 477
33721	Office furniture (including fixtures) mfg . . . . .	2	63	18	1 535	30 059	1 131	1 681	17 768	61 168	41 619	103 397	3 477
337211	Wood office furniture mfg . . . . .	1	12	4	431	7 399	374	585	5 557	15 199	15 568	30 828	561
337212	Custom architectural woodwork & millwork mfg . . . . .	1	24	7	506	9 478	319	415	5 068	16 036	9 207	25 541	1 771
337214	Office furniture (except wood) mfg . . . . .	2	4	2	103	2 542	54	65	841	11 304	3 782	15 104	350
337215	Showcase, partition, shelving, & locker mfg . . . . .	4	23	5	495	10 640	384	616	6 302	18 629	13 062	31 924	795
3379	Other furniture related product mfg . . . . .	2	28	8	662	14 815	442	866	8 718	50 249	49 297	104 069	3 590
33791	Mattress mfg . . . . .	—	18	5	349	8 806	254	529	6 521	28 639	33 730	62 126	2 497
337910	Mattress mfg . . . . .	—	18	5	349	8 806	254	529	6 521	28 639	33 730	62 126	2 497
33792	Blind & shade mfg . . . . .	5	10	3	313	6 009	188	337	2 197	21 610	15 567	41 943	1 093
337920	Blind & shade mfg . . . . .	5	10	3	313	6 009	188	337	2 197	21 610	15 567	41 943	1 093
339	Miscellaneous mfg . . . . .	1	511	78	8 837	267 242	5 433	11 124	109 462	740 758	393 665	1 125 868	37 982
3391	Medical equipment & supplies mfg . . . . .	1	205	21	3 400	123 153	1 719	3 136	38 777	425 470	161 315	577 669	19 485
33911	Medical equipment & supplies mfg . . . . .	1	205	21	3 400	123 153	1 719	3 136	38 777	425 470	161 315	577 669	19 485
339112	Surgical & medical instrument mfg . . . . .	1	17	9	963	36 273	313	477	5 452	127 938	23 313	138 776	3 144
339113	Surgical appliance & supplies mfg . . . . .	—	22	4	1 544	63 161	749	1 500	17 783	245 322	117 704	364 486	14 537
339116	Dental laboratories . . . . .	5	145	8	771	20 135	570	980	13 385	44 291	16 465	62 384	1 463
3399	Other miscellaneous mfg . . . . .	1	306	57	5 437	144 089	3 714	7 988	70 685	315 288	232 350	548 199	18 497
33991	Jewelry & silverware mfg . . . . .	4	53	1	215	4 350	156	225	2 351	14 848	10 318	25 082	395
33992	Sporting & athletic goods mfg . . . . .	—	37	13	2 035	57 703	1 476	2 684	29 693	141 590	98 582	242 087	7 893
339920	Sporting & athletic goods mfg . . . . .	—	37	13	2 035	57 703	1 476	2 684	29 693	141 590	98 582	242 087	7 893
33993	Doll, toy, & game mfg . . . . .	5	15	5	251	5 127	169	323	2 504	12 749	9 681	21 866	636
339932	Game, toy, & children's vehicle mfg . . . . .	6	12	5	234	4 836	156	300	2 311	11 841	9 283	20 516	629
33994	Office supplies (except paper) mfg . . . . .	2	18	2	187	3 475	144	237	2 276	7 601	5 047	12 563	473
339943	Marking device mfg . . . . .	2	11	1	118	1 837	90	131	1 218	4 191	2 389	6 507	197

**Table 1. Industry Statistics for the State: 1997—Con.**

[Includes data for industry groups and industries with 100 employees or more. For information on geographic areas followed by \* and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
<b>31-33</b>	<b>ARIZONA—Con.</b>												
	<b>Manufacturing—Con.</b>												
339	Miscellaneous mfg—Con.												
3399	Other miscellaneous mfg—Con.												
33995	Sign mfg . . . . .	1	115	14	1 369	41 898	757	1 490	17 767	74 685	64 442	137 624	4 339
339950	Sign mfg . . . . .	1	115	14	1 369	41 898	757	1 490	17 767	74 685	64 442	137 624	4 339
33999	All other miscellaneous mfg . . . . .	3	68	22	1 380	31 536	1 012	3 029	16 094	63 815	44 280	108 977	4 761
339991	Gasket, packing, & sealing device mfg . . . . .	9	7	2	158	3 310	132	274	2 178	7 610	5 204	12 740	1 117
339992	Musical instrument mfg . . . . .	1	6	2	243	4 197	219	477	3 445	6 615	3 071	11 537	D
339999	All other miscellaneous mfg . . . . .	3	52	18	949	23 283	645	2 237	10 133	48 102	34 491	81 721	3 280

<sup>1</sup>Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

<sup>2</sup>Industries with 100 employees or more are shown. Some statistics are withheld to avoid disclosing data for individual companies. If employment is 100 or more, number of establishments is shown and employment-size range is indicated by one of the following symbols: c–100 to 249 employees; e–250 to 499 employees; f–500 to 999 employees; g–1,000 to 2,499 employees; h–2,500 to 4,999 employees; i–5,000 to 9,999 employees; j–10,000 to 24,999 employees; k–25,000 to 49,999 employees; l–50,000 to 99,999 employees; m–100,000 employees or more.

**Table 2. Industry Statistics for Metropolitan Areas: 1997**

[Includes data for industry groups and industries with 250 employees or more. For definitions of CMSAs, MSAs, and PMSAs, information on geographic areas followed by \*, and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
<b>31-33</b>	<b>FLAGSTAFF, AZ–UT MSA</b>												
	<b>Manufacturing . . . .</b>	–	<b>101</b>	<b>15</b>	<b>2 487</b>	<b>81 859</b>	<b>1 411</b>	<b>2 913</b>	<b>33 697</b>	<b>358 079</b>	<b>241 868</b>	<b>603 701</b>	<b>27 506</b>
	Flagstaff, AZ–UT MSA (AZ Part) . . . . .	–	95	13	g	D	D	D	D	D	D	D	D
	Flagstaff, AZ–UT MSA (UT Part) . . . . .	–	6	2	e	D	D	D	D	D	D	D	D
339	Miscellaneous mfg . . . . .	–	13	3	g	D	D	D	D	D	D	D	D
3391	Medical equipment & supplies mfg . . . . .	–	6	1	g	D	D	D	D	D	D	D	D
33911	Medical equipment & supplies mfg . . . . .	–	6	1	g	D	D	D	D	D	D	D	D
339113	Surgical appliance & supplies mfg . . . . .	–	3	1	g	D	D	D	D	D	D	D	D
3399	Other miscellaneous mfg . . . . .	–	7	2	e	D	D	D	D	D	D	D	D
<b>31-33</b>	<b>LAS VEGAS, NV–AZ MSA</b>												
	<b>Manufacturing . . . .</b>	<b>1</b>	<b>990</b>	<b>225</b>	<b>21 588</b>	<b>636 554</b>	<b>16 072</b>	<b>31 538</b>	<b>410 832</b>	<b>2 035 961</b>	<b>1 872 078</b>	<b>3 923 949</b>	<b>131 869</b>
	Las Vegas, NV–AZ MSA (AZ Part) . . . . .	–	156	33	3 807	85 202	3 166	5 735	60 768	343 952	398 925	760 367	17 181
	Las Vegas, NV–AZ MSA (NV Part) . . . . .	1	834	192	17 781	551 352	12 906	25 803	350 064	1 692 009	1 473 153	3 163 582	114 688
311	Food mfg . . . . .	–	60	16	1 981	54 403	1 325	3 055	29 553	220 765	164 602	386 505	10 919
3113	Sugar & confectionery product mfg . . . . .	–	6	2	f	D	D	D	D	D	D	D	1 453
31133	Confectionery mfg from purchased chocolate . . . . .	–	3	1	e	D	D	D	D	D	D	D	D
311330	Confectionery mfg from purchased chocolate . . . . .	–	3	1	e	D	D	D	D	D	D	D	D
3115	Dairy product mfg . . . . .	–	5	2	f	D	D	D	D	D	D	D	D
31152	Ice cream & frozen dessert mfg . . . . .	–	3	1	e	D	D	D	D	D	D	D	D
311520	Ice cream & frozen dessert mfg . . . . .	–	3	1	e	D	D	D	D	D	D	D	D
3118	Bakeries & tortilla mfg . . . . .	2	34	6	422	11 062	295	563	6 348	20 839	12 115	32 972	3 363
31181	Bread & bakery product mfg . . . . .	3	31	5	e	D	D	D	D	D	D	D	D

**Table 2. Industry Statistics for Metropolitan Areas: 1997—Con.**

[Includes data for industry groups and industries with 250 employees or more. For definitions of CMSAs, MSAs, and PMSAs, information on geographic areas followed by \*, and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
<b>31-33</b>	<b>LAS VEGAS, NV—AZ MSA—Con.</b>												
	<b>Manufacturing—Con.</b>												
312	Beverage & tobacco product mfg .....	-	12	3	374	11 966	241	563	6 795	104 459	76 640	174 499	3 083
3121	Beverage mfg .....	-	10	2	e	D	D	D	D	D	D	D	D
31211	Soft drink & ice mfg .....	-	8	2	e	D	D	D	D	D	D	D	D
321	Wood product mfg .....	4	34	8	784	17 521	644	1 237	11 875	42 749	43 397	86 810	1 288
3212	Veneer, plywood, & engineered wood product mfg .....	3	12	5	538	12 172	446	886	8 453	33 146	29 496	63 028	827
32121	Veneer, plywood, & engineered wood product mfg .....	3	12	5	538	12 172	446	886	8 453	33 146	29 496	63 028	827
321214	Truss mfg .....	3	12	5	538	12 172	446	886	8 453	33 146	29 496	63 028	827
322	Paper mfg .....	-	10	3	300	11 389	234	528	8 325	75 402	67 491	136 860	D
3222	Converted paper product mfg .....	-	10	3	300	11 389	234	528	8 325	75 402	67 491	136 860	D
323	Printing & related support activities .....	2	138	18	1 653	44 218	1 219	2 130	27 884	91 713	64 482	156 472	6 689
3231	Printing & related support activities .....	2	138	18	1 653	44 218	1 219	2 130	27 884	91 713	64 482	156 472	6 689
32311	Printing .....	2	123	17	g	D	D	D	D	D	D	D	D
323110	Commercial lithographic printing ..	1	45	8	772	23 002	593	1 059	15 139	51 002	38 168	89 707	D
323113	Commercial screen printing .....	1	21	6	412	9 126	283	519	4 753	16 985	13 604	30 741	D
325	Chemical mfg .....	1	41	8	774	28 841	482	946	17 532	111 855	82 633	203 986	19 283
3251	Basic chemical mfg .....	-	7	3	508	20 672	321	654	13 573	75 647	53 783	138 557	16 521
32518	Other basic inorganic chemical mfg .....	-	3	2	e	D	D	D	D	D	D	D	D
325188	All other basic inorganic chemical mfg .....	-	2	1	e	D	D	D	D	D	D	D	D
326	Plastics & rubber products mfg .....	2	52	19	1 928	49 684	1 578	3 424	36 305	162 220	188 619	345 677	11 590
3261	Plastics product mfg .....	2	49	18	1 860	47 614	1 527	3 289	35 038	153 738	184 724	333 185	10 973
32611	Unsupported plastics film, sheet, & bag mfg ..	1	5	5	e	D	D	D	D	D	D	D	D
326113	Unsupported plastics film & sheet (except packaging) mfg .....	1	4	4	e	D	D	D	D	D	D	D	D
32619	Other plastics product mfg .....	2	37	11	1 289	30 793	1 066	2 348	23 988	101 209	97 122	193 577	7 225
326199	All other plastics product mfg .....	2	34	10	g	D	D	D	D	D	D	D	D
327	Nonmetallic mineral product mfg .....	1	84	44	3 153	115 312	2 521	5 294	89 291	354 837	288 867	643 256	21 583
3273	Cement & concrete product mfg .....	2	49	28	1 876	68 221	1 494	3 133	53 498	194 608	147 798	342 222	14 362
32732	Ready-mix concrete mfg .....	1	24	15	1 261	49 390	1 116	2 368	44 225	138 944	103 713	243 000	7 199
327320	Ready-mix concrete mfg .....	1	24	15	1 261	49 390	1 116	2 368	44 225	138 944	103 713	243 000	7 199
32739	Other concrete product mfg .....	4	12	6	345	10 171	193	362	4 432	31 483	20 003	52 298	1 037
327390	Other concrete product mfg .....	4	12	6	345	10 171	193	362	4 432	31 483	20 003	52 298	1 037
3274	Lime & gypsum product mfg .....	-	8	6	e	D	D	D	D	D	D	D	D
32742	Gypsum product mfg .....	-	5	3	e	D	D	D	D	D	D	D	D
327420	Gypsum product mfg ..	-	5	3	e	D	D	D	D	D	D	D	D
3279	Other nonmetallic mineral product mfg .....	-	14	6	450	16 326	401	837	14 792	33 582	47 800	81 362	D
32799	All other nonmetallic mineral product mfg ...	-	14	6	450	16 326	401	837	14 792	33 582	47 800	81 362	D
327999	All other miscellaneous nonmetallic mineral product mfg .....	-	8	3	344	14 206	318	688	13 227	28 571	45 663	74 245	D
331	Primary metal mfg .....	-	7	4	g	D	D	D	D	D	D	D	D
3314	Nonferrous metal (except aluminum) production & processing .....	-	3	1	f	D	D	D	D	D	D	D	D
33149	Other nonferrous metal rolling, drawing, extruding, & alloying ...	-	2	1	f	D	D	D	D	D	D	D	D
331491	Other nonferrous metal rolling, drawing, & extruding .....	-	2	1	f	D	D	D	D	D	D	D	D



**Table 2. Industry Statistics for Metropolitan Areas: 1997—Con.**

[Includes data for industry groups and industries with 250 employees or more. For definitions of CMSAs, MSAs, and PMSAs, information on geographic areas followed by \*, and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
<b>31-33</b>	<b>LAS VEGAS, NV—AZ MSA—Con.</b>												
	<b>Manufacturing—Con.</b>												
332	Fabricated metal product mfg . . . . .	2	126	20	1 639	45 270	1 244	2 262	27 714	95 544	87 199	182 688	6 363
3323	Architectural & structural metals mfg . . . . .	2	47	9	725	17 947	560	1 033	11 302	43 599	44 640	87 460	1 555
33232	Ornamental & architectural metal products mfg. . . . .	1	38	8	660	16 096	512	947	10 128	39 754	39 593	78 552	1 369
332321	Metal window & door mfg. . . . .	1	7	3	e	D	D	D	D	D	D	D	D
332322	Sheet metal work mfg. . . . .	2	23	4	e	D	D	D	D	D	D	D	D
3327	Machine shops, turned product, & screw, nut, & bolt mfg . . . . .	1	40	2	e	D	D	D	D	D	D	D	3 016
333	Machinery mfg . . . . .	—	35	7	1 062	22 719	901	1 233	13 170	84 356	84 686	175 275	D
3339	Other general-purpose machinery mfg . . . . .	—	9	2	f	D	D	D	D	D	D	D	D
33399	All other general-purpose machinery mfg . . . . .	—	5	1	f	D	D	D	D	D	D	D	D
333991	Power-driven handtool mfg . . . . .	—	1	1	f	D	D	D	D	D	D	D	D
334	Computer & electronic product mfg. . . . .	3	42	12	1 127	33 610	788	1 464	19 461	54 760	83 073	139 943	5 610
3344	Semiconductor & other electronic component mfg . . . . .	1	15	5	627	16 121	533	1 023	10 954	18 573	54 349	74 333	2 467
33441	Semiconductor & other electronic component mfg . . . . .	1	15	5	627	16 121	533	1 023	10 954	18 573	54 349	74 333	2 467
334419	Other electronic component mfg . . . . .	—	6	2	356	10 311	292	563	6 535	6 673	41 036	49 017	D
3345	Navigational, measuring, medical, & control instruments mfg . . . . .	4	13	5	317	10 685	173	304	5 129	18 513	12 901	31 675	1 423
33451	Navigational, measuring, medical, & control instruments mfg . . . . .	4	13	5	317	10 685	173	304	5 129	18 513	12 901	31 675	1 423
335	Electrical equipment, appliance, & component mfg . . . . .	—	14	1	339	9 555	279	556	7 085	48 424	126 991	182 786	D
3359	Other electrical equipment & component mfg . . . . .	—	7	1	e	D	D	D	D	D	D	D	D
336	Transportation equipment mfg . . . . .	6	37	7	e	D	D	D	D	D	D	D	2 016
337	Furniture & related product mfg . . . . .	—	75	16	1 317	29 326	1 104	2 064	22 202	114 447	61 927	176 053	2 619
3371	Household & institutional furniture & kitchen cabinet mfg . . . . .	—	54	11	1 007	21 555	872	1 681	16 778	94 382	50 192	144 138	1 892
33711	Wood kitchen cabinet & counter top mfg . . . . .	—	31	9	847	18 484	738	1 450	14 407	88 298	45 347	133 207	1 490
337110	Wood kitchen cabinet & counter top mfg . . . . .	—	31	9	847	18 484	738	1 450	14 407	88 298	45 347	133 207	1 490
3372	Office furniture (including fixtures) mfg . . . . .	—	17	5	e	D	D	D	D	D	D	D	D
33721	Office furniture (including fixtures) mfg . . . . .	—	17	5	e	D	D	D	D	D	D	D	D
339	Miscellaneous mfg. . . . .	2	171	35	3 317	109 368	2 052	4 086	56 808	221 000	198 473	423 242	22 019
3391	Medical equipment & supplies mfg . . . . .	5	62	4	489	12 985	366	650	8 717	29 640	13 238	42 846	1 529
33911	Medical equipment & supplies mfg . . . . .	5	62	4	489	12 985	366	650	8 717	29 640	13 238	42 846	1 529
3399	Other miscellaneous mfg . . . . .	2	109	31	2 828	96 383	1 686	3 436	48 091	191 360	185 235	380 396	20 490
33993	Doll, toy, & game mfg . . . . .	1	8	5	263	7 863	196	376	4 453	17 625	15 945	33 581	D
339932	Game, toy, & children's vehicle mfg . . . . .	1	8	5	263	7 863	196	376	4 453	17 625	15 945	33 581	D
33995	Sign mfg . . . . .	3	40	13	1 302	50 281	850	1 811	29 415	79 484	47 671	131 094	7 048
339950	Sign mfg . . . . .	3	40	13	1 302	50 281	850	1 811	29 415	79 484	47 671	131 094	7 048
33999	All other miscellaneous mfg . . . . .	1	31	9	915	30 508	421	865	9 551	74 440	106 708	181 282	10 969
339999	All other miscellaneous mfg . . . . .	1	29	9	f	D	D	D	D	D	D	D	D

**Table 2. Industry Statistics for Metropolitan Areas: 1997—Con.**

[Includes data for industry groups and industries with 250 employees or more. For definitions of CMSAs, MSAs, and PMSAs, information on geographic areas followed by \*, and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
	<b>PHOENIX—MESA, AZ MSA</b>												
<b>31-33</b>	<b>Manufacturing . . . .</b>	<b>-</b>	<b>3 438</b>	<b>1 026</b>	<b>148 277</b>	<b>5 199 813</b>	<b>92 462</b>	<b>190 348</b>	<b>2 314 812</b>	<b>23 087 446</b>	<b>12 327 124</b>	<b>35 312 730</b>	<b>2 239 000</b>
311	Food mfg . . . . .	1	162	54	7 386	191 920	5 219	10 657	112 965	888 267	1 309 034	2 205 604	95 925
3114	Fruit & vegetable preserving & specialty food mfg . . . . .	6	11	3	396	9 882	311	565	4 951	70 711	52 256	123 021	3 653
31142	Fruit & vegetable canning, pickling, & drying . . . . .	8	9	2	e	D	D	D	D	D	D	D	D
3115	Dairy product mfg . . . . .	-	12	9	g	D	D	D	D	D	D	D	D
31151	Dairy product (except frozen) mfg . . . . .	-	11	8	g	D	D	D	D	D	D	D	D
311511	Fluid milk mfg . . . . .	-	6	5	940	33 321	381	966	14 658	102 192	251 280	357 757	D
311514	Dry, condensed, & evaporated dairy product mfg . . . . .	-	2	2	f	D	D	D	D	D	D	D	D
3116	Meat product mfg . . . . .	-	17	5	g	D	D	D	D	D	D	D	D
31161	Animal slaughtering & processing . . . . .	-	17	5	g	D	D	D	D	D	D	D	D
311611	Animal (except poultry) slaughtering . . . . .	-	7	1	g	D	D	D	D	D	D	D	D
3118	Bakeries & tortilla mfg . . . . .	1	74	23	2 799	64 872	1 931	3 443	36 033	226 133	122 655	349 998	7 837
31181	Bread & bakery product mfg . . . . .	2	62	18	1 964	48 666	1 249	2 249	25 856	158 522	72 363	230 877	5 275
311812	Commercial bakeries . . . . .	2	29	16	1 748	45 811	1 107	2 084	24 398	151 106	67 040	218 140	4 897
31182	Cookie, cracker, & pasta mfg . . . . .	-	4	1	e	D	D	D	D	D	D	D	D
311823	Dry pasta mfg . . . . .	-	2	1	e	D	D	D	D	D	D	D	D
31183	Tortilla mfg . . . . .	-	8	4	f	D	D	D	D	D	D	D	D
311830	Tortilla mfg . . . . .	-	8	4	f	D	D	D	D	D	D	D	D
3119	Other food mfg . . . . .	1	28	9	881	23 123	739	1 349	14 165	137 085	66 212	203 109	D
31191	Snack food mfg . . . . .	-	7	4	f	D	D	D	D	D	D	D	D
311919	Other snack food mfg . . . . .	-	6	3	f	D	D	D	D	D	D	D	D
31199	All other food mfg . . . . .	7	10	3	e	D	D	D	D	D	D	D	D
312	Beverage & tobacco product mfg . . . . .	-	19	12	1 088	32 117	526	1 100	11 497	135 051	294 535	428 013	20 580
3121	Beverage mfg . . . . .	-	19	12	1 088	32 117	526	1 100	11 497	135 051	294 535	428 013	20 580
31211	Soft drink & ice mfg . . . . .	-	13	11	1 040	31 253	490	1 069	10 835	129 853	290 119	418 413	20 215
312111	Soft drink mfg . . . . .	-	6	6	f	D	D	D	D	D	D	D	18 286
314	Textile product mills . . . . .	5	75	11	f	D	D	D	D	D	D	D	2 803
3149	Other textile product mills . . . . .	4	41	11	f	D	D	D	D	D	D	D	2 719
31491	Textile bag & canvas mills . . . . .	6	16	5	e	D	D	D	D	D	D	D	1 304
314912	Canvas & related product mills . . . . .	6	14	4	e	D	D	D	D	D	D	D	D
31499	All other textile product mills . . . . .	4	25	6	e	D	D	D	D	D	D	D	1 415
314999	All other miscellaneous textile product mills . . . . .	4	24	6	e	D	D	D	D	D	D	D	D
315	Apparel mfg . . . . .	3	54	10	1 335	19 535	939	1 746	13 036	23 439	31 514	57 348	1 317
3152	Cut & sew apparel mfg . . . . .	5	36	7	f	D	D	D	D	D	D	D	D
31523	Women's & girls' cut & sew apparel mfg . . . . .	5	16	4	f	D	D	D	D	D	D	D	D
315232	Women's & girls' cut & sew blouse & shirt mfg . . . . .	7	6	2	e	D	D	D	D	D	D	D	D
3159	Apparel accessories & other apparel mfg . . . . .	1	17	2	e	D	D	D	D	D	D	D	583
31599	Apparel accessories & other apparel mfg . . . . .	1	17	2	e	D	D	D	D	D	D	D	583
315991	Hat, cap, & millinery mfg . . . . .	-	3	1	e	D	D	D	D	D	D	D	D
321	Wood product mfg . . . . .	-	126	66	6 301	144 843	5 304	10 281	105 049	329 487	450 751	779 819	10 895
3212	Veneer, plywood, & engineered wood product mfg . . . . .	2	21	16	1 125	28 141	916	1 880	19 322	61 639	87 579	148 278	2 191
32121	Veneer, plywood, & engineered wood product mfg . . . . .	2	21	16	1 125	28 141	916	1 880	19 322	61 639	87 579	148 278	2 191
321214	Truss mfg . . . . .	1	18	16	1 095	27 374	891	1 836	18 741	58 877	84 855	142 719	1 834

**Table 2. Industry Statistics for Metropolitan Areas: 1997—Con.**

[Includes data for industry groups and industries with 250 employees or more. For definitions of CMSAs, MSAs, and PMSAs, information on geographic areas followed by \*, and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
<b>31-33</b>	<b>PHOENIX—MESA, AZ MSA—Con.</b>												
	<b>Manufacturing—Con.</b>												
321	Wood product mfg—Con.												
3219	Other wood product mfg ...	—	101	49	5 145	115 999	4 364	8 354	85 248	264 493	361 230	626 315	8 663
32191	Millwork .....	1	51	23	1 263	25 989	1 029	1 715	19 176	44 291	78 433	124 011	3 195
321911	Wood window & door mfg .....	2	21	10	553	13 088	470	766	9 514	20 895	20 181	42 839	1 387
321918	Other millwork (including flooring) ...	2	27	11	f	D	D	D	D	D	D	D	D
32192	Wood container & pallet mfg .....	3	14	8	439	8 661	335	687	5 171	13 965	17 716	31 525	692
321920	Wood container & pallet mfg .....	3	14	8	439	8 661	335	687	5 171	13 965	17 716	31 525	692
32199	All other wood product mfg .....	—	36	18	3 443	81 349	3 000	5 952	60 901	206 237	265 081	470 779	4 776
321991	Manufactured home (mobile home) mfg ..	—	11	9	2 099	51 049	1 853	3 795	41 484	138 086	166 274	304 139	2 868
321992	Prefabricated wood building mfg .....	—	8	4	1 059	24 178	929	1 706	15 483	53 941	84 494	138 301	1 271
321999	All other miscellaneous wood product mfg ...	1	17	5	285	6 122	218	451	3 934	14 210	14 313	28 339	637
322	Paper mfg .....	—	32	19	1 960	64 462	1 556	3 390	41 153	179 557	200 660	378 691	13 857
3222	Converted paper product mfg .....	—	32	19	1 960	64 462	1 556	3 390	41 153	179 557	200 660	378 691	13 857
32221	Paperboard container mfg .....	—	14	10	f	D	D	D	D	D	D	D	D
322211	Corrugated & solid fiber box mfg .....	—	10	7	f	D	D	D	D	D	D	D	D
32223	Stationery product mfg ...	—	8	5	e	D	D	D	D	D	D	D	D
322232	Envelope mfg .....	—	3	2	e	D	D	D	D	D	D	D	D
32229	Other converted paper product mfg .....	—	8	3	f	D	D	D	D	D	D	D	D
322299	All other converted paper product mfg ...	—	6	1	f	D	D	D	D	D	D	D	D
323	Printing & related support activities .....	1	505	91	7 456	206 575	5 346	10 140	130 135	440 897	264 453	705 972	44 159
3231	Printing & related support activities .....	1	505	91	7 456	206 575	5 346	10 140	130 135	440 897	264 453	705 972	44 159
32311	Printing .....	1	453	79	6 447	176 464	4 587	8 644	109 080	383 314	254 923	638 691	41 316
323110	Commercial lithographic printing ..	1	192	45	3 374	96 862	2 263	4 537	58 737	207 566	135 108	343 129	25 961
323113	Commercial screen printing .....	3	57	9	638	12 681	476	770	6 859	25 901	19 197	45 033	3 671
323114	Quick printing .....	2	116	7	975	22 376	726	1 077	13 999	46 899	26 251	73 123	2 678
323116	Manifold business form printing .....	—	18	8	586	17 662	421	853	11 485	52 518	33 996	86 573	4 871
323118	Blankbook, looseleaf binder, & device mfg .	4	8	5	302	7 515	261	602	5 031	15 120	8 316	23 147	350
32312	Support activities for printing .....	1	52	12	1 009	30 111	759	1 496	21 055	57 583	9 530	67 281	2 843
323121	Tradebinding & related work .....	3	17	5	e	D	D	D	D	D	D	D	D
323122	Prepress services .....	1	35	7	f	D	D	D	D	D	D	D	D
325	Chemical mfg .....	—	130	40	5 844	165 503	4 275	8 196	92 950	1 302 849	571 785	1 862 207	47 692
3251	Basic chemical mfg .....	—	13	5	548	16 306	214	367	5 165	72 287	49 744	121 281	17 560
32518	Other basic inorganic chemical mfg .....	—	5	1	393	10 158	108	181	1 902	16 238	25 114	43 720	D
325188	All other basic inorganic chemical mfg .....	—	5	1	393	10 158	108	181	1 902	16 238	25 114	43 720	D
3254	Pharmaceutical & medicine mfg .....	—	18	9	1 162	42 773	873	1 688	25 628	255 429	148 022	396 404	12 310
32541	Pharmaceutical & medicine mfg .....	—	18	9	1 162	42 773	873	1 688	25 628	255 429	148 022	396 404	12 310
325412	Pharmaceutical preparation mfg .....	—	8	7	g	D	D	D	D	D	D	D	D
3256	Soap, cleaning compound, & toilet preparation mfg ..	—	29	7	g	D	D	D	D	D	D	D	D
32562	Toilet preparation mfg ...	—	10	3	g	D	D	D	D	D	D	D	D
325620	Toilet preparation mfg .	—	10	3	g	D	D	D	D	D	D	D	D
3259	Other chemical product mfg .....	1	32	12	1 358	37 597	1 049	2 130	20 484	70 011	111 288	185 938	8 193
32592	Explosives mfg .....	—	3	3	f	D	D	D	D	D	D	D	D
325920	Explosives mfg .....	—	3	3	f	D	D	D	D	D	D	D	D
32599	All other chemical product & preparation mfg .....	4	23	7	321	9 021	178	301	4 555	31 510	31 848	63 137	2 567

**Table 2. Industry Statistics for Metropolitan Areas: 1997—Con.**

[Includes data for industry groups and industries with 250 employees or more. For definitions of CMSAs, MSAs, and PMSAs, information on geographic areas followed by \*, and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
<b>31-33</b>	<b>PHOENIX—MESA, AZ MSA—Con.</b>												
	<b>Manufacturing—Con.</b>												
326	Plastics & rubber products mfg . . . . .	1	171	76	6 401	169 045	4 769	9 328	107 058	403 533	401 845	805 839	42 019
3261	Plastics product mfg . . . . .	1	146	62	5 655	147 656	4 253	8 301	95 678	355 690	371 946	728 584	39 189
32612	Plastics pipe, pipe fitting, & unsupported profile shape mfg . . . . .	3	9	7	326	8 968	270	579	6 503	25 739	45 404	70 969	D
32614	Polystyrene foam product mfg . . . . .	5	8	4	e	D	D	D	D	D	D	D	D
326140	Polystyrene foam product mfg . . . . .	5	8	4	e	D	D	D	D	D	D	D	D
32616	Plastics bottle mfg . . . . .	—	6	4	e	D	D	D	D	D	D	D	D
326160	Plastics bottle mfg . . . . .	—	6	4	e	D	D	D	D	D	D	D	D
32619	Other plastics product mfg . . . . .	1	105	43	4 420	115 303	3 282	6 381	73 749	269 748	259 507	531 536	27 178
326191	Plastics plumbing fixture mfg . . . . .	—	6	4	e	D	D	D	D	D	D	D	D
326199	All other plastics product mfg . . . . .	1	98	39	4 003	104 325	3 043	5 854	68 469	240 795	238 359	480 645	26 457
3262	Rubber product mfg . . . . .	1	25	14	746	21 389	516	1 027	11 380	47 843	29 899	77 255	2 830
32629	Other rubber product mfg . . . . .	1	15	9	558	17 427	371	714	8 878	33 796	15 061	48 796	D
326299	All other rubber product mfg . . . . .	1	11	5	e	D	D	D	D	D	D	D	1 047
327	Nonmetallic mineral product mfg . . . . .	1	140	51	3 883	112 458	2 942	6 138	75 863	341 966	300 302	630 496	28 967
3271	Clay product & refractory mfg . . . . .	2	26	2	e	D	D	D	D	D	D	D	D
3272	Glass & glass product mfg . . . . .	1	23	7	418	11 637	310	577	7 049	32 649	18 941	51 007	1 650
32721	Glass & glass product mfg . . . . .	1	23	7	418	11 637	310	577	7 049	32 649	18 941	51 007	1 650
327215	Glass product mfg made of purchased glass . . . . .	1	21	6	e	D	D	D	D	D	D	D	D
3273	Cement & concrete product mfg . . . . .	1	69	33	2 713	81 319	2 030	4 298	54 322	248 833	218 860	456 890	22 914
32732	Ready-mix concrete mfg . . . . .	2	25	10	1 049	31 942	796	1 646	23 283	92 295	107 647	200 216	12 493
327320	Ready-mix concrete mfg . . . . .	2	25	10	1 049	31 942	796	1 646	23 283	92 295	107 647	200 216	12 493
32733	Concrete pipe, brick, & block mfg . . . . .	—	18	11	605	18 535	453	1 057	12 149	78 409	49 790	116 488	4 428
327331	Concrete block & brick mfg . . . . .	1	13	7	358	10 756	230	527	6 022	35 950	34 952	69 351	D
32739	Other concrete product mfg . . . . .	—	26	12	1 059	30 842	781	1 595	18 890	78 129	61 423	140 186	5 993
327390	Other concrete product mfg . . . . .	—	26	12	1 059	30 842	781	1 595	18 890	78 129	61 423	140 186	5 993
3279	Other nonmetallic mineral product mfg . . . . .	3	19	7	400	10 220	332	718	8 007	34 649	37 265	72 035	2 844
32799	All other nonmetallic mineral product mfg . . . . .	3	18	7	e	D	D	D	D	D	D	D	D
331	Primary metal mfg . . . . .	—	37	21	h	D	D	D	D	D	D	D	D
3313	Alumina & aluminum production & processing . . . . .	—	4	4	1 226	41 089	965	2 339	27 680	168 911	90 131	258 827	D
33131	Alumina & aluminum production & processing . . . . .	—	4	4	1 226	41 089	965	2 339	27 680	168 911	90 131	258 827	D
331316	Aluminum extruded product mfg . . . . .	—	4	4	1 226	41 089	965	2 339	27 680	168 911	90 131	258 827	D
3314	Nonferrous metal (except aluminum) production & processing . . . . .	—	13	8	g	D	D	D	D	D	D	D	D
33141	Nonferrous metal (except aluminum) smelting & refining . . . . .	—	6	5	g	D	D	D	D	D	D	D	D
331411	Primary smelting & refining of copper . . . . .	—	3	3	g	D	D	D	D	D	D	D	D
3315	Foundries . . . . .	—	15	8	g	D	D	D	D	D	D	D	D
33151	Ferrous metal foundries . . . . .	—	8	4	f	D	D	D	D	D	D	D	D
331512	Steel investment foundries . . . . .	—	4	2	f	D	D	D	D	D	D	D	D
33152	Nonferrous metal foundries . . . . .	—	7	4	e	D	D	D	D	D	D	D	D

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			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
<b>31-33</b>	<b>PHOENIX—MESA, AZ MSA—Con.</b>												
	<b>Manufacturing—Con.</b>												
332	Fabricated metal product mfg .....	1	615	172	14 955	474 918	10 419	21 023	257 925	1 256 918	911 391	2 168 496	77 055
3321	Forging & stamping .....	2	27	12	745	25 882	572	1 169	16 371	65 522	71 437	136 671	4 766
33211	Forging & stamping .....	2	27	12	745	25 882	572	1 169	16 371	65 522	71 437	136 671	4 766
332116	Metal stamping .....	2	18	9	f	D	D	D	D	D	D	D	D
3323	Architectural & structural metals mfg .....	—	162	55	5 120	141 860	3 392	6 825	71 581	319 246	335 719	667 078	14 869
33231	Plate work & fabricated structural product mfg ..	—	44	19	2 030	61 044	1 172	2 165	25 398	153 381	163 848	327 716	6 580
332311	Prefabricated metal building & component mfg .....	1	7	2	460	9 977	313	477	5 694	20 974	27 074	48 178	D
332312	Fabricated structural metal mfg .....	—	31	16	1 503	48 960	812	1 594	18 738	129 432	132 203	271 997	5 129
33232	Ornamental & architectural metal products mfg .....	1	118	36	3 090	80 816	2 220	4 660	46 183	165 865	171 871	339 362	8 289
332321	Metal window & door mfg .....	—	24	10	g	D	D	D	D	D	D	D	D
332322	Sheet metal work mfg ..	1	59	19	g	D	D	D	D	D	D	D	5 355
332323	Ornamental & architectural metal work mfg .....	1	35	7	e	D	D	D	D	D	D	D	D
3324	Boiler, tank, & shipping container mfg .....	—	11	5	e	D	D	D	D	D	D	D	D
3327	Machine shops, turned product, & screw, nut, & bolt mfg .....	1	256	59	3 990	139 979	3 107	6 395	93 332	276 040	117 212	388 195	38 010
33271	Machine shops .....	2	227	46	2 993	108 132	2 296	4 606	69 797	205 513	83 351	284 593	21 332
332710	Machine shops .....	2	227	46	2 993	108 132	2 296	4 606	69 797	205 513	83 351	284 593	21 332
33272	Turned product & screw, nut, & bolt mfg .....	1	29	13	997	31 847	811	1 789	23 535	70 527	33 861	103 602	16 678
332721	Precision turned product mfg .....	—	24	10	f	D	D	D	D	D	D	D	D
3328	Coating, engraving, heat treating, & allied activities ..	1	78	20	1 434	37 273	1 126	2 075	23 979	78 643	27 577	106 956	5 355
33281	Coating, engraving, heat treating, & allied activities .....	1	78	20	1 434	37 273	1 126	2 075	23 979	78 643	27 577	106 956	5 355
332812	Metal coating/engraving (exc jewelry/silverware)/ allied services .....	1	30	6	493	10 785	397	675	7 135	26 064	10 542	36 502	D
332813	Electroplating, plating, polishing, anodizing, & coloring .....	2	38	10	731	19 832	565	1 101	12 445	36 549	12 449	49 666	D
3329	Other fabricated metal product mfg .....	—	54	16	2 980	109 301	1 680	3 594	37 426	458 525	290 551	740 450	12 449
33291	Metal valve mfg .....	—	9	5	g	D	D	D	D	D	D	D	D
332912	Fluid power valve & hose fitting mfg .....	—	6	4	g	D	D	D	D	D	D	D	D
33299	All other fabricated metal product mfg .....	1	45	11	f	D	D	D	D	D	D	D	D
332999	All other miscellaneous fabricated metal product mfg .....	1	31	7	f	D	D	D	D	D	D	D	1 320
333	Machinery mfg .....	1	234	69	7 369	223 880	5 088	9 755	129 081	644 830	496 339	1 137 354	49 669
3331	Agriculture, construction, & mining machinery mfg .....	—	17	5	g	D	D	D	D	D	D	D	D
33311	Agricultural implement mfg .....	—	7	1	g	D	D	D	D	D	D	D	D
333112	Lawn & garden tractor & home lawn & garden equipment mfg .....	—	1	1	g	D	D	D	D	D	D	D	D
3332	Industrial machinery mfg ..	1	47	18	2 064	72 347	1 072	2 162	34 384	223 413	150 168	369 093	25 510
33329	Other industrial machinery mfg .....	1	38	15	g	D	D	D	D	D	D	D	D
333295	Semiconductor machinery mfg .....	—	16	8	g	D	D	D	D	D	D	D	D
333298	All other industrial machinery mfg .....	4	15	5	354	11 013	209	386	5 523	24 856	17 911	41 055	1 244
3333	Commercial & service industry machinery mfg ..	2	35	8	551	18 468	354	661	8 704	56 968	65 384	124 050	3 565
33331	Commercial & service industry machinery mfg .....	2	35	8	551	18 468	354	661	8 704	56 968	65 384	124 050	3 565
333319	Other commercial & service industry machinery mfg .....	1	16	6	314	10 190	210	402	5 364	33 602	53 193	87 489	2 044

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<b>31-33</b>	<b>PHOENIX—MESA, AZ MSA—Con.</b>													
	<b>Manufacturing—Con.</b>													
333	Machinery mfg—Con.													
3334	Ventilation, heating, AC, & commercial refrigeration equip mfg . . . . .	—	18	6	g	D	D	D	D	D	D	D	D	
33341	Ventilation, heating, AC, & commercial refrigeration equip mfg . . . . .	—	18	6	g	D	D	D	D	D	D	D	D	
333415	AC & warm air heating & commercial/ industrial refrig equip mfg . . . . .	—	11	5	g	D	D	D	D	D	D	D	D	
3335	Metalworking machinery mfg . . . . .	3	81	20		1 349	47 636	976	1 807	29 834	102 055	40 904	136 205	7 545
33351	Metalworking machinery mfg . . . . .	3	81	20		1 349	47 636	976	1 807	29 834	102 055	40 904	136 205	7 545
333511	Industrial mold mfg . . . . .	1	21	5		330	14 350	252	494	9 461	30 685	13 662	40 527	D
333514	Special die & tool, die set, jig, & fixture mfg . . . . .	2	40	8		500	18 149	355	693	12 097	34 871	11 475	46 178	2 607
333518	Other metalworking machinery mfg . . . . .	6	2	2	e	D	D	D	D	D	D	D	D	D
3339	Other general-purpose machinery mfg . . . . .	2	31	9	f	D	D	D	D	D	D	D	D	D
33399	All other general-purpose machinery mfg . . . . .	4	17	6	e	D	D	D	D	D	D	D	D	D
334	Computer & electronic product mfg . . . . .	—	274	127		43 743	1 905 715	21 175	45 865	595 784	12 887 427	2 545 509	15 410 741	1 524 089
3341	Computer & peripheral equipment mfg . . . . .	2	39	12	g	D	D	D	D	D	D	D	D	13 034
33411	Computer & peripheral equipment mfg . . . . .	2	39	12	g	D	D	D	D	D	D	D	D	13 034
334113	Computer terminal mfg . . . . .	—	3	1	e	D	D	D	D	D	D	D	D	D
334119	Other computer peripheral equipment mfg . . . . .	2	24	8		606	22 465	216	441	5 534	38 307	55 220	93 543	D
3342	Communications equipment mfg . . . . .	1	39	18	i	D	D	D	D	D	D	D	D	D
33421	Telephone apparatus mfg . . . . .	3	9	6		1 274	54 628	723	1 598	27 255	154 938	78 696	235 233	9 454
334210	Telephone apparatus mfg . . . . .	3	9	6		1 274	54 628	723	1 598	27 255	154 938	78 696	235 233	9 454
33422	Radio & TV broadcasting & wireless communications equipment mfg . . . . .	—	24	10		5 305	114 592	1 883	3 348	46 051	544 830	218 427	772 277	32 303
334220	Radio & TV broadcasting & wireless communications equipment mfg . . . . .	—	24	10		5 305	114 592	1 883	3 348	46 051	544 830	218 427	772 277	32 303
3343	Audio & video equipment mfg . . . . .	—	6	4	f	D	D	D	D	D	D	D	D	D
33431	Audio & video equipment mfg . . . . .	—	6	4	f	D	D	D	D	D	D	D	D	D
334310	Audio & video equipment mfg . . . . .	—	6	4	f	D	D	D	D	D	D	D	D	D
3344	Semiconductor & other electronic component mfg . . . . .	—	122	65		25 986	1 193 556	14 847	33 378	401 668	10 265 709	1 490 545	11 726 102	1 411 607
33441	Semiconductor & other electronic component mfg . . . . .	—	122	65		25 986	1 193 556	14 847	33 378	401 668	10 265 709	1 490 545	11 726 102	1 411 607
334412	Bare printed circuit board mfg . . . . .	—	30	16		3 092	87 879	2 404	5 018	57 650	303 618	175 519	471 885	43 776
334413	Semiconductor & related device mfg . . . . .	—	41	23		16 808	899 375	7 934	18 369	221 208	9 458 874	632 694	10 056 005	D
334416	Electronic coil, transformer, & other inductor mfg . . . . .	—	9	7		303	5 196	259	466	3 472	9 585	5 533	15 164	D
334417	Electronic connector mfg . . . . .	—	6	2	f	D	D	D	D	D	D	D	D	D
334418	Printed circuit assembly (electronic assembly) mfg . . . . .	—	10	8	h	D	D	D	D	D	D	D	D	D
334419	Other electronic component mfg . . . . .	2	25	8		559	19 616	391	745	13 343	32 516	20 273	57 125	1 905
3345	Navigational, measuring, medical, & control instruments mfg . . . . .	—	60	24		8 950	457 009	2 638	5 357	94 385	1 767 320	546 007	2 312 274	54 868

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<b>31-33</b>	<b>PHOENIX—MESA, AZ MSA—Con.</b>												
	<b>Manufacturing—Con.</b>												
334	Computer & electronic product mfg—Con.												
3345	Navigational, measuring, medical, & control instruments mfg—Con.												
33451	Navigational, measuring, medical, & control instruments mfg . . . . .	-	60	24	8 950	457 009	2 638	5 357	94 385	1 767 320	546 007	2 312 274	54 868
334510	Electromedical & electrotherapeutic apparatus mfg . . . . .	9	7	2	e	D	D	D	D	D	D	D	D
334511	Search, detection, navigation, & guidance instrument mfg . . . . .	-	14	7	i	D	D	D	D	D	D	D	D
334513	Industrial process control instrument mfg . . . . .	-	10	4	g	D	D	D	D	D	D	D	D
334515	Electricity measuring & testing instrument mfg . . . . .	1	12	5	e	D	D	D	D	D	D	D	D
3346	Mfg & reproducing magnetic & optical media .	2	8	4	e	D	D	D	D	D	D	D	D
33461	Mfg & reproducing magnetic & optical media . . . . .	2	8	4	e	D	D	D	D	D	D	D	D
335	Electrical equipment, appliance, & component mfg . . . . .	-	67	23	3 577	109 793	2 308	4 654	56 242	317 933	332 346	674 854	21 837
3351	Electric lighting equipment mfg . . . . .	-	18	5	561	16 225	361	673	6 482	31 003	23 679	54 923	1 357
33512	Lighting fixture mfg . . . . .	-	18	5	561	16 225	361	673	6 482	31 003	23 679	54 923	1 357
335129	Other lighting equipment mfg . . . . .	-	7	2	e	D	D	D	D	D	D	D	D
3352	Household appliance mfg..	-	3	2	e	D	D	D	D	D	D	D	D
3353	Electrical equipment mfg ..	5	19	5	e	D	D	D	D	D	D	D	D
33531	Electrical equipment mfg . . . . .	5	19	5	e	D	D	D	D	D	D	D	D
3359	Other electrical equipment & component mfg . . . . .	-	27	11	2 493	78 973	1 580	3 281	40 785	238 061	265 102	526 744	18 684
33592	Communication & energy wire & cable mfg . . . . .	-	4	4	g	D	D	D	D	D	D	D	D
335929	Other communication & energy wire mfg ...	-	4	4	g	D	D	D	D	D	D	D	D
33599	All other electrical equipment & component mfg . . . . .	-	15	6	e	D	D	D	D	D	D	D	D
335999	All other miscellaneous electrical equipment & component mfg . . . . .	-	14	6	e	D	D	D	D	D	D	D	D
336	Transportation equipment mfg . . . . .	-	174	71	19 823	907 554	9 911	22 083	300 610	2 670 608	2 012 470	4 567 984	162 942
3362	Motor vehicle body & trailer mfg . . . . .	2	25	4	e	D	D	D	D	D	D	D	709
33621	Motor vehicle body & trailer mfg . . . . .	2	25	4	e	D	D	D	D	D	D	D	709
3363	Motor vehicle parts mfg ...	-	68	27	i	D	D	D	D	D	D	D	54 039
33631	Motor vehicle gasoline engine & engine parts mfg . . . . .	1	15	4	553	10 126	431	491	6 265	19 095	24 571	43 808	2 216
336312	Gasoline engine & engine parts mfg . . . . .	-	12	3	f	D	D	D	D	D	D	D	D
33632	Motor vehicle electrical & electronic equipment mfg . . . . .	7	10	5	e	D	D	D	D	D	D	D	D
336322	Other motor vehicle electrical & electronic equipment mfg . . . . .	7	10	5	e	D	D	D	D	D	D	D	D
33633	Motor vehicle steering & suspension component (except spring) mfg . . . . .	-	1	1	e	D	D	D	D	D	D	D	D
336330	Motor vehicle steering & suspension component (except spring) mfg . . . . .	-	1	1	e	D	D	D	D	D	D	D	D
33636	Motor vehicle seating & interior trim mfg . . . . .	3	5	4	588	15 245	472	858	7 916	38 954	35 955	75 302	D
336360	Motor vehicle seating & interior trim mfg ...	3	5	4	588	15 245	472	858	7 916	38 954	35 955	75 302	D
33639	Other motor vehicle parts mfg . . . . .	-	25	7	h	D	D	D	D	D	D	D	D
336399	All other motor vehicle parts mfg . . . . .	-	25	7	h	D	D	D	D	D	D	D	D

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	<b>PHOENIX—MESA, AZ MSA—Con.</b>													
<b>31-33</b>	<b>Manufacturing—Con.</b>													
336	Transportation equipment mfg—Con.													
3364	Aerospace product & parts mfg .....	—	56	33	j	D	D	D	D	D	D	D	104 682	
33641	Aerospace product & parts mfg .....	—	56	33	j	D	D	D	D	D	D	D	104 682	
336411	Aircraft mfg .....	—	2	2	h	D	D	D	D	D	D	D	D	
336412	Aircraft engine & engine parts mfg ....	—	18	15	i	D	D	D	D	D	D	D	D	
336413	Other aircraft part & auxiliary equipment mfg .....	—	33	15	g	D	D	D	D	D	D	D	D	
336414	Guided missile & space vehicle mfg ...	—	1	1	f	D	D	D	D	D	D	D	D	
3366	Ship & boat building .....	—	5	2	e	D	D	D	D	D	D	D	911	
33661	Ship & boat building ....	—	5	2	e	D	D	D	D	D	D	D	911	
336612	Boat building .....	—	5	2	e	D	D	D	D	D	D	D	911	
3369	Other transportation equipment mfg .....	—	16	3		7 361	254	425	3 777	12 212	32 235	41 419	1 275	
33699	Other transportation equipment mfg .....	—	16	3		7 361	254	425	3 777	12 212	32 235	41 419	1 275	
337	Furniture & related product mfg .....	1	254	66		6 962	143 811	5 641	10 566	101 216	303 624	251 337	554 102	17 302
3371	Household & institutional furniture & kitchen cabinet mfg .....	1	180	42		4 893	101 480	4 157	8 132	75 993	201 279	175 848	374 384	10 638
33711	Wood kitchen cabinet & counter top mfg .....	1	79	15		1 340	33 097	1 038	1 991	19 886	65 892	42 363	108 273	1 728
337110	Wood kitchen cabinet & counter top mfg ...	1	79	15		1 340	33 097	1 038	1 991	19 886	65 892	42 363	108 273	1 728
33712	Household & institutional furniture mfg .....	1	101	27		3 553	68 383	3 119	6 141	56 107	135 387	133 485	266 111	8 910
337121	Upholstered household furniture mfg .....	3	20	7		325	6 959	284	461	5 191	9 613	13 336	23 195	542
337122	Nonupholstered wood household furniture mfg .....	1	61	14		2 722	48 891	2 399	4 862	41 273	97 477	96 513	191 677	6 486
3372	Office furniture (including fixtures) mfg .....	2	52	17		1 462	28 664	1 078	1 636	17 009	58 542	39 892	99 067	3 356
33721	Office furniture (including fixtures) mfg .....	2	52	17		1 462	28 664	1 078	1 636	17 009	58 542	39 892	99 067	3 356
337211	Wood office furniture mfg .....	1	10	4	e	D	D	D	D	D	D	D	D	D
337212	Custom architectural woodwork & millwork mfg .....	1	17	6		446	8 304	277	383	4 448	13 787	7 797	21 905	1 671
337215	Showcase, partition, shelving, & locker mfg .....	3	21	5	e	D	D	D	D	D	D	D	D	D
3379	Other furniture related product mfg .....	—	22	7		607	13 667	406	798	8 214	43 803	35 597	80 651	3 308
33791	Mattress mfg .....	—	14	5	e	D	D	D	D	D	D	D	D	D
337910	Mattress mfg .....	—	14	5	e	D	D	D	D	D	D	D	D	D
33792	Blind & shade mfg .....	—	8	2	e	D	D	D	D	D	D	D	D	D
337920	Blind & shade mfg ....	—	8	2	e	D	D	D	D	D	D	D	D	D
339	Miscellaneous mfg .....	1	326	45		4 892	151 862	2 984	6 894	65 500	388 828	213 219	592 965	15 281
3391	Medical equipment & supplies mfg .....	2	129	8		1 202	42 224	575	975	12 674	147 278	25 008	161 309	D
33911	Medical equipment & supplies mfg .....	2	129	8		1 202	42 224	575	975	12 674	147 278	25 008	161 309	D
339112	Surgical & medical instrument mfg .....	—	8	2	f	D	D	D	D	D	D	D	D	D
339116	Dental laboratories ...	5	101	6		541	13 879	410	667	9 113	30 839	11 204	43 337	D
3399	Other miscellaneous mfg ...	1	197	37		3 690	109 638	2 409	5 919	52 826	241 550	188 211	431 656	D
33992	Sporting & athletic goods mfg .....	—	21	5		1 258	39 942	920	1 832	22 164	98 441	75 286	178 717	D
339920	Sporting & athletic goods mfg .....	—	21	5		1 258	39 942	920	1 832	22 164	98 441	75 286	178 717	D
33995	Sign mfg .....	—	80	12		1 148	37 228	602	1 262	15 365	67 819	59 785	126 108	4 080
339950	Sign mfg .....	—	80	12		1 148	37 228	602	1 262	15 365	67 819	59 785	126 108	4 080
33999	All other miscellaneous mfg .....	4	43	16		873	23 101	602	2 308	10 226	48 816	34 902	82 790	4 334
339999	All other miscellaneous mfg .....	3	34	14		701	19 363	462	2 015	7 869	40 465	29 124	68 731	2 959



**Table 2. Industry Statistics for Metropolitan Areas: 1997—Con.**

[Includes data for industry groups and industries with 250 employees or more. For definitions of CMSAs, MSAs, and PMSAs, information on geographic areas followed by \*, and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
<b>TUCSON, AZ MSA</b>													
<b>31-33</b>	<b>Manufacturing ....</b>	-	<b>764</b>	<b>200</b>	<b>26 746</b>	<b>1 064 717</b>	<b>15 013</b>	<b>29 020</b>	<b>356 897</b>	<b>2 350 070</b>	<b>1 790 042</b>	<b>4 455 183</b>	<b>154 291</b>
311	Food mfg .....	1	44	8	654	11 112	426	653	6 760	23 711	43 012	66 900	1 165
3118	Bakeries & tortilla mfg .....	2	27	4	399	6 711	242	336	3 593	11 706	10 301	21 988	541
31181	Bread & bakery product mfg .....	1	19	3	e	D	D	D	D	D	D	D	D
312	Beverage & tobacco product mfg .....	-	9	3	575	14 417	190	344	4 398	42 906	83 572	126 507	4 475
3121	Beverage mfg .....	-	9	3	575	14 417	190	344	4 398	42 906	83 572	126 507	4 475
31211	Soft drink & ice mfg .....	-	5	3	f	D	D	D	D	D	D	D	D
312111	Soft drink mfg .....	-	2	2	e	D	D	D	D	D	D	D	D
321	Wood product mfg .....	2	22	7	385	8 594	300	560	5 561	19 871	20 808	40 392	770
3219	Other wood product mfg ...	1	21	6	e	D	D	D	D	D	D	D	D
32191	Millwork .....	1	16	5	305	6 437	244	447	4 489	15 719	16 942	32 356	574
323	Printing & related support activities.....	1	111	20	1 220	28 552	905	1 400	16 665	66 268	36 734	103 010	8 350
3231	Printing & related support activities.....	1	111	20	1 220	28 552	905	1 400	16 665	66 268	36 734	103 010	8 350
32311	Printing .....	1	97	19	g	D	D	D	D	D	D	D	D
323110	Commercial lithographic printing ..	1	49	14	764	18 563	558	873	10 810	38 520	23 788	62 287	7 323
325	Chemical mfg .....	5	21	5	284	9 536	179	339	5 215	38 733	26 669	65 296	2 607
326	Plastics & rubber products mfg .....	-	39	17	1 100	25 788	870	1 672	17 591	63 454	55 218	119 096	5 677
3261	Plastics product mfg .....	-	30	13	f	D	D	D	D	D	D	D	D
32619	Other plastics product mfg .....	-	22	11	804	18 025	652	1 280	12 928	45 228	37 813	83 482	D
326199	All other plastics product mfg .....	-	17	9	719	15 904	595	1 169	11 563	41 106	35 303	76 877	D
327	Nonmetallic mineral product mfg .....	1	59	25	1 796	45 108	1 177	2 189	28 270	176 645	105 860	285 484	17 891
3271	Clay product & refractory mfg .....	-	21	9	532	12 356	384	725	6 677	25 915	14 011	41 523	1 457
32711	Pottery, ceramics, & plumbing fixture mfg ...	-	14	8	468	10 419	334	638	5 231	23 371	12 416	36 795	D
3273	Cement & concrete product mfg .....	-	20	11	1 041	27 539	626	1 177	18 182	137 846	77 901	216 925	15 621
32732	Ready-mix concrete mfg .....	2	8	6	f	D	D	D	D	D	D	D	D
327320	Ready-mix concrete mfg .....	2	8	6	f	D	D	D	D	D	D	D	D
332	Fabricated metal product mfg .....	-	123	27	3 768	109 668	3 037	6 086	67 053	264 655	146 070	410 225	13 877
3323	Architectural & structural metals mfg .....	-	39	9	1 500	44 656	1 237	2 555	26 314	102 327	66 348	168 501	3 060
33231	Plate work & fabricated structural product mfg ..	1	15	5	310	9 227	214	371	4 884	20 865	13 256	34 018	865
33232	Ornamental & architectural metal products mfg .....	-	24	4	1 190	35 429	1 023	2 184	21 430	81 462	53 092	134 483	2 195
332322	Sheet metal work mfg ..	-	11	3	642	22 486	522	1 066	10 882	48 713	38 566	87 596	D
332323	Ornamental & architectural metal work mfg .....	-	11	1	f	D	D	D	D	D	D	D	D
3325	Hardware mfg .....	-	3	2	f	D	D	D	D	D	D	D	D
33251	Hardware mfg .....	-	3	2	f	D	D	D	D	D	D	D	D
332510	Hardware mfg .....	-	3	2	f	D	D	D	D	D	D	D	D
3327	Machine shops, turned product, & screw, nut, & bolt mfg .....	2	45	10	f	D	D	D	D	D	D	D	D
33271	Machine shops .....	1	42	8	581	17 975	431	751	11 933	30 976	13 337	43 934	3 125
332710	Machine shops .....	1	42	8	581	17 975	431	751	11 933	30 976	13 337	43 934	3 125
3329	Other fabricated metal product mfg .....	-	16	2	e	D	D	D	D	D	D	D	D
333	Machinery mfg .....	2	52	18	1 988	64 023	1 267	2 485	28 525	156 508	123 951	271 841	9 535
3331	Agriculture, construction, & mining machinery mfg ....	-	5	2	e	D	D	D	D	D	D	D	D
3333	Commercial & service industry machinery mfg ..	3	20	7	865	27 387	435	765	8 610	76 899	52 564	122 016	3 440
33331	Commercial & service industry machinery mfg .....	3	20	7	865	27 387	435	765	8 610	76 899	52 564	122 016	3 440
333313	Office machinery mfg ..	7	3	2	e	D	D	D	D	D	D	D	D
333319	Other commercial & service industry machinery mfg .....	-	6	2	e	D	D	D	D	D	D	D	D
3335	Metalworking machinery mfg .....	1	12	5	347	10 276	248	487	6 700	16 465	10 219	26 459	D
33351	Metalworking machinery mfg .....	1	12	5	347	10 276	248	487	6 700	16 465	10 219	26 459	D

**Table 2. Industry Statistics for Metropolitan Areas: 1997—Con.**

[Includes data for industry groups and industries with 250 employees or more. For definitions of CMSAs, MSAs, and PMSAs, information on geographic areas followed by \*, and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
	<b>TUCSON, AZ MSA—Con.</b>												
<b>31-33</b>	<b>Manufacturing—Con.</b>												
333	Machinery mfg—Con.												
3339	Other general-purpose machinery mfg . . . . .	3	7	3	e	D	D	D	D	D	D	D	D
33399	All other general-purpose machinery mfg . . . . .	4	6	3	e	D	D	D	D	D	D	D	D
333999	All other miscellaneous general-purpose machinery mfg . . . . .	4	3	3		315	11 853	261	604	5 912	19 247	24 166	42 367
334	Computer & electronic product mfg . . . . .	—	56	28		3 904	174 330	1 774	3 678	58 408	551 380	250 812	786 966
3341	Computer & peripheral equipment mfg . . . . .	1	8	5		330	10 553	92	202	3 345	24 151	30 875	54 680
33411	Computer & peripheral equipment mfg . . . . .	1	8	5		330	10 553	92	202	3 345	24 151	30 875	54 680
3344	Semiconductor & other electronic component mfg . . . . .	—	22	10		1 731	70 383	872	2 077	29 336	266 643	53 860	314 961
33441	Semiconductor & other electronic component mfg . . . . .	—	22	10		1 731	70 383	872	2 077	29 336	266 643	53 860	314 961
334413	Semiconductor & related device mfg . . . . .	—	5	3		g	D	D	D	D	D	D	D
3345	Navigational, measuring, medical, & control instruments mfg . . . . .	—	17	8		g	D	D	D	D	D	D	D
33451	Navigational, measuring, medical, & control instruments mfg . . . . .	—	17	8		g	D	D	D	D	D	D	D
334511	Search, detection, navigation, & guidance instrument mfg . . . . .	—	2	1		f	D	D	D	D	D	D	D
335	Electrical equipment, appliance, & component mfg . . . . .	2	16	6		e	D	D	D	D	D	D	D
3359	Other electrical equipment & component mfg . . . . .	—	5	3		e	D	D	D	D	D	D	D
33599	All other electrical equipment & component mfg . . . . .	—	4	2		e	D	D	D	D	D	D	D
335999	All other miscellaneous electrical equipment & component mfg . . . . .	—	4	2		e	D	D	D	D	D	D	D
336	Transportation equipment mfg . . . . .	—	19	6		i	D	D	D	D	D	D	25 547
3364	Aerospace product & parts mfg . . . . .	—	7	6		i	D	D	D	D	D	D	D
33641	Aerospace product & parts mfg . . . . .	—	7	6		i	D	D	D	D	D	D	D
336411	Aircraft mfg . . . . .	—	2	2		g	D	D	D	D	D	D	D
336414	Guided missile & space vehicle mfg . . . . .	—	1	1		i	D	D	D	D	D	D	D
337	Furniture & related product mfg . . . . .	3	54	4		385	7 893	299	537	5 073	15 932	10 267	26 217
3371	Household & institutional furniture & kitchen cabinet mfg . . . . .	3	42	3		e	D	D	D	D	D	D	1 635
339	Miscellaneous mfg . . . . .	1	86	17		1 607	43 405	1 063	1 500	15 853	103 916	143 577	245 331
3391	Medical equipment & supplies mfg . . . . .	1	46	7		704	23 166	428	620	7 772	65 232	117 416	182 458
33911	Medical equipment & supplies mfg . . . . .	1	46	7		704	23 166	428	620	7 772	65 232	117 416	182 458
339112	Surgical & medical instrument mfg . . . . .	4	7	6		e	D	D	D	D	D	D	D
3399	Other miscellaneous mfg . . . . .	—	40	10		903	20 239	635	880	8 081	38 684	26 161	62 873
33992	Sporting & athletic goods mfg . . . . .	—	5	4		513	12 523	349	448	3 796	24 881	17 311	40 472
339920	Sporting & athletic goods mfg . . . . .	—	5	4		513	12 523	349	448	3 796	24 881	17 311	40 472

**Table 2. Industry Statistics for Metropolitan Areas: 1997—Con.**

[Includes data for industry groups and industries with 250 employees or more. For definitions of CMSAs, MSAs, and PMSAs, information on geographic areas followed by \*, and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
<b>YUMA, AZ MSA</b>													
<b>31-33</b>	<b>Manufacturing . . . .</b>	—	<b>66</b>	<b>17</b>	<b>3 041</b>	<b>54 607</b>	<b>2 701</b>	<b>5 266</b>	<b>42 916</b>	<b>158 034</b>	<b>232 735</b>	<b>389 463</b>	<b>10 278</b>
313	Textile mills . . . . .	—	4	2	e	D	D	D	D	D	D	D	D
3131	Fiber, yarn, & thread mills . . . . .	—	2	2	e	D	D	D	D	D	D	D	D
31311	Fiber, yarn, & thread mills . . . . .	—	2	2	e	D	D	D	D	D	D	D	D
313112	Yarn texturing, throwing, & twisting mills . . . . .	—	2	2	e	D	D	D	D	D	D	D	D
336	Transportation equipment mfg . . . . .	—	3	1	g	D	D	D	D	D	D	D	D
3363	Motor vehicle parts mfg . . . . .	—	3	1	g	D	D	D	D	D	D	D	D
33632	Motor vehicle electrical & electronic equipment mfg . . . . .	—	1	1	g	D	D	D	D	D	D	D	D
336322	Other motor vehicle electrical & electronic equipment mfg . . . . .	—	1	1	g	D	D	D	D	D	D	D	D

<sup>1</sup>Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

<sup>2</sup>Industries with 250 employees or more are shown. Some statistics are withheld to avoid disclosing data for individual companies. If employment is 250 or more, number of establishments is shown and employment-size range is indicated by one of the following symbols: c–100 to 249 employees; e–250 to 499 employees; f–500 to 999 employees; g–1,000 to 2,499 employees, h–2,500 to 4,999 employees; i–5,000 to 9,999 employees; j–10,000 to 24,999 employees; k–25,000 to 49,999 employees; l–50,000 to 99,999 employees; m–100,000 employees or more.

**Table 3. Industry Statistics for Counties: 1997**

[Includes data for industry groups and industries with 500 employees or more. For information on geographic areas followed by \* and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
<b>COCHISE COUNTY, AZ</b>													
<b>31-33</b>	<b>Manufacturing . . . .</b>	<b>3</b>	<b>53</b>	<b>16</b>	<b>921</b>	<b>20 892</b>	<b>641</b>	<b>1 095</b>	<b>12 385</b>	<b>62 569</b>	<b>87 604</b>	<b>153 756</b>	<b>4 671</b>
<b>COCONINO COUNTY, AZ</b>													
<b>31-33</b>	<b>Manufacturing . . . .</b>	—	<b>95</b>	<b>13</b>	<b>g</b>	<b>D</b>	<b>D</b>	<b>D</b>	<b>D</b>	<b>D</b>	<b>D</b>	<b>D</b>	<b>D</b>
339	Miscellaneous mfg . . . . .	—	12	2	g	D	D	D	D	D	D	D	D
3391	Medical equipment & supplies mfg . . . . .	—	6	1	g	D	D	D	D	D	D	D	D
33911	Medical equipment & supplies mfg . . . . .	—	6	1	g	D	D	D	D	D	D	D	D
339113	Surgical appliance & supplies mfg . . . . .	—	3	1	g	D	D	D	D	D	D	D	D
<b>GILA COUNTY, AZ</b>													
<b>31-33</b>	<b>Manufacturing . . . .</b>	—	<b>34</b>	<b>6</b>	<b>g</b>	<b>D</b>	<b>D</b>	<b>D</b>	<b>D</b>	<b>D</b>	<b>D</b>	<b>D</b>	<b>D</b>
331	Primary metal mfg . . . . .	—	4	4	g	D	D	D	D	D	D	D	D
3314	Nonferrous metal (except aluminum) production & processing . . . . .	—	4	4	g	D	D	D	D	D	D	D	D
33141	Nonferrous metal (except aluminum) smelting & refining . . . . .	—	3	3	g	D	D	D	D	D	D	D	D
331411	Primary smelting & refining of copper . . . . .	—	2	2	g	D	D	D	D	D	D	D	D

**Table 3. Industry Statistics for Counties: 1997—Con.**

[Includes data for industry groups and industries with 500 employees or more. For information on geographic areas followed by \* and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
<b>MARICOPA COUNTY, AZ</b>													
<b>31-33</b>	<b>Manufacturing ....</b>	-	<b>3 364</b>	<b>996</b>	<b>143 683</b>	<b>5 045 014</b>	<b>88 996</b>	<b>183 042</b>	<b>2 213 647</b>	<b>22 363 545</b>	<b>10 562 486</b>	<b>32 782 122</b>	<b>2 119 299</b>
311	Food mfg.....	1	154	50	i	D	D	D	D	D	D	D	D
3115	Dairy product mfg.....	-	11	8	g	D	D	D	D	D	D	D	D
31151	Dairy product (except frozen) mfg.....	-	10	7	g	D	D	D	D	D	D	D	D
311511	Fluid milk mfg.....	-	6	5	940	33 321	381	966	14 658	102 192	251 280	357 757	D
3116	Meat product mfg.....	-	17	5	g	D	D	D	D	D	D	D	D
31161	Animal slaughtering & processing.....	-	17	5	g	D	D	D	D	D	D	D	D
311611	Animal (except poultry) slaughtering.....	-	7	1	g	D	D	D	D	D	D	D	D
3118	Bakeries & tortilla mfg.....	1	70	22	h	D	D	D	D	D	D	D	D
31181	Bread & bakery product mfg.....	2	60	17	g	D	D	D	D	D	D	D	D
311812	Commercial bakeries..	2	28	15	g	D	D	D	D	D	D	D	D
31183	Tortilla mfg.....	-	6	4	f	D	D	D	D	D	D	D	D
311830	Tortilla mfg.....	-	6	4	f	D	D	D	D	D	D	D	D
3119	Other food mfg.....	4	26	8	f	D	D	D	D	D	D	D	D
312	Beverage & tobacco product mfg.....	-	17	10	g	D	D	D	D	D	D	D	D
3121	Beverage mfg.....	-	17	10	g	D	D	D	D	D	D	D	D
31211	Soft drink & ice mfg.....	-	11	9	f	D	D	D	D	D	D	D	D
312111	Soft drink mfg.....	-	4	4	f	D	D	D	D	D	D	D	D
314	Textile product mills.....	5	75	11	f	D	D	D	D	D	D	D	2 803
3149	Other textile product mills..	4	41	11	f	D	D	D	D	D	D	D	2 719
315	Apparel mfg.....	3	52	10	g	D	D	D	D	D	D	D	D
3152	Cut & sew apparel mfg....	5	34	7	f	D	D	D	D	D	D	D	D
31523	Women's & girls' cut & sew apparel mfg.....	5	15	4	f	D	D	D	D	D	D	D	D
321	Wood product mfg.....	-	122	62	6 169	142 289	5 196	10 058	103 190	317 318	441 737	758 767	10 504
3212	Veneer, plywood, & engineered wood product mfg.....	2	20	15	g	D	D	D	D	D	D	D	D
32121	Veneer, plywood, & engineered wood product mfg.....	2	20	15	g	D	D	D	D	D	D	D	D
321214	Truss mfg.....	1	17	15	g	D	D	D	D	D	D	D	D
3219	Other wood product mfg....	-	99	47	i	D	D	D	D	D	D	D	D
32191	Millwork.....	1	51	23	1 263	25 989	1 029	1 715	19 176	44 291	78 433	124 011	3 195
321911	Wood window & door mfg.....	2	21	10	553	13 088	470	766	9 514	20 895	20 181	42 839	1 387
321918	Other millwork (including flooring)...	2	27	11	f	D	D	D	D	D	D	D	D
32199	All other wood product mfg.....	-	34	16	h	D	D	D	D	D	D	D	D
321991	Manufactured home (mobile home) mfg..	-	10	8	g	D	D	D	D	D	D	D	D
321992	Prefabricated wood building mfg.....	-	8	4	1 059	24 178	929	1 706	15 483	53 941	84 494	138 301	1 271
322	Paper mfg.....	-	31	18	g	D	D	D	D	D	D	D	D
3222	Converted paper product mfg.....	-	31	18	g	D	D	D	D	D	D	D	D
32221	Paperboard container mfg.....	-	14	10	f	D	D	D	D	D	D	D	D
322211	Corrugated & solid fiber box mfg.....	-	10	7	f	D	D	D	D	D	D	D	D
323	Printing & related support activities.....	1	498	90	7 342	201 292	5 253	9 958	126 144	433 854	256 153	690 362	D
3231	Printing & related support activities.....	1	498	90	7 342	201 292	5 253	9 958	126 144	433 854	256 153	690 362	D
32311	Printing.....	2	446	78	6 333	171 181	4 494	8 462	105 089	376 271	246 623	623 081	D
323110	Commercial lithographic printing..	1	188	45	h	D	D	D	D	D	D	D	D
323113	Commercial screen printing.....	3	57	9	638	12 681	476	770	6 859	25 901	19 197	45 033	3 671
323114	Quick printing.....	2	115	7	f	D	D	D	D	D	D	D	D
323116	Manifold business form printing.....	-	18	8	586	17 662	421	853	11 485	52 518	33 996	86 573	4 871
32312	Support activities for printing.....	1	52	12	1 009	30 111	759	1 496	21 055	57 583	9 530	67 281	2 843
323122	Prepress services....	1	35	7	f	D	D	D	D	D	D	D	D

**Table 3. Industry Statistics for Counties: 1997—Con.**

[Includes data for industry groups and industries with 500 employees or more. For information on geographic areas followed by \* and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
<b>31-33</b>	<b>MARICOPA COUNTY, AZ—Con.</b>												
	<b>Manufacturing—Con.</b>												
325	Chemical mfg . . . . .	—	124	39	5 798	164 335	4 246	8 153	92 185	1 295 243	561 186	1 844 169	47 315
3251	Basic chemical mfg . . . . .	—	12	5	f	D	D	D	D	D	D	D	D
3254	Pharmaceutical & medicine mfg . . . . .	—	18	9	1 162	42 773	873	1 688	25 628	255 429	148 022	396 404	12 310
32541	Pharmaceutical & medicine mfg . . . . .	—	18	9	1 162	42 773	873	1 688	25 628	255 429	148 022	396 404	12 310
325412	Pharmaceutical preparation mfg . . . . .	—	8	7	g	D	D	D	D	D	D	D	D
3256	Soap, cleaning compound, & toilet preparation mfg . . . . .	—	28	7	g	D	D	D	D	D	D	D	D
32562	Toilet preparation mfg . . . . .	—	10	3	g	D	D	D	D	D	D	D	D
325620	Toilet preparation mfg . . . . .	—	10	3	g	D	D	D	D	D	D	D	D
3259	Other chemical product mfg . . . . .	1	31	11	g	D	D	D	D	D	D	D	D
32592	Explosives mfg . . . . .	—	3	3	f	D	D	D	D	D	D	D	D
325920	Explosives mfg . . . . .	—	3	3	f	D	D	D	D	D	D	D	D
326	Plastics & rubber products mfg . . . . .	1	167	76	6 391	168 847	4 760	9 313	106 911	403 065	401 223	804 745	41 974
3261	Plastics product mfg . . . . .	1	143	62	i	D	D	D	D	D	D	D	D
32619	Other plastics product mfg . . . . .	1	104	43	h	D	D	D	D	D	D	D	D
326199	All other plastics product mfg . . . . .	1	97	39	h	D	D	D	D	D	D	D	D
3262	Rubber product mfg . . . . .	1	24	14	f	D	D	D	D	D	D	D	D
32629	Other rubber product mfg . . . . .	1	15	9	558	17 427	371	714	8 878	33 796	15 061	48 796	D
327	Nonmetallic mineral product mfg . . . . .	1	133	48	h	D	D	D	D	D	D	D	27 537
3273	Cement & concrete product mfg . . . . .	1	66	31	g	D	D	D	D	D	D	D	D
32732	Ready-mix concrete mfg . . . . .	2	23	9	f	D	D	D	D	D	D	D	D
327320	Ready-mix concrete mfg . . . . .	2	23	9	f	D	D	D	D	D	D	D	D
32733	Concrete pipe, brick, & block mfg . . . . .	—	18	11	605	18 535	453	1 057	12 149	78 409	49 790	116 488	4 428
32739	Other concrete product mfg . . . . .	1	25	11	f	D	D	D	D	D	D	D	D
327390	Other concrete product mfg . . . . .	1	25	11	f	D	D	D	D	D	D	D	D
331	Primary metal mfg . . . . .	—	32	17	h	D	D	D	D	D	D	D	D
3313	Alumina & aluminum production & processing . . . . .	—	4	4	1 226	41 089	965	2 339	27 680	168 911	90 131	258 827	D
33131	Alumina & aluminum production & processing . . . . .	—	4	4	1 226	41 089	965	2 339	27 680	168 911	90 131	258 827	D
331316	Aluminum extruded product mfg . . . . .	—	4	4	1 226	41 089	965	2 339	27 680	168 911	90 131	258 827	D
3315	Foundries . . . . .	—	15	8	g	D	D	D	D	D	D	D	D
33151	Ferrous metal foundries . . . . .	—	8	4	f	D	D	D	D	D	D	D	D
331512	Steel investment foundries . . . . .	—	4	2	f	D	D	D	D	D	D	D	D
332	Fabricated metal product mfg . . . . .	1	605	169	14 329	460 211	9 970	20 204	249 069	1 229 693	874 303	2 101 490	68 014
3321	Forging & stamping . . . . .	2	27	12	745	25 882	572	1 169	16 371	65 522	71 437	136 671	4 766
33211	Forging & stamping . . . . .	2	27	12	745	25 882	572	1 169	16 371	65 522	71 437	136 671	4 766
332116	Metal stamping . . . . .	2	18	9	f	D	D	D	D	D	D	D	D
3323	Architectural & structural metals mfg . . . . .	—	158	53	h	D	D	D	D	D	D	D	D
33231	Plate work & fabricated structural product mfg . . . . .	—	43	18	g	D	D	D	D	D	D	D	D
332312	Fabricated structural metal mfg . . . . .	—	31	16	1 503	48 960	812	1 594	18 738	129 432	132 203	271 997	5 129
33232	Ornamental & architectural metal products mfg . . . . .	1	115	35	h	D	D	D	D	D	D	D	D
332321	Metal window & door mfg . . . . .	—	24	10	g	D	D	D	D	D	D	D	D
332322	Sheet metal work mfg . . . . .	2	58	18	g	D	D	D	D	D	D	D	D
3327	Machine shops, turned product, & screw, nut, & bolt mfg . . . . .	1	251	58	h	D	D	D	D	D	D	D	D
33271	Machine shops . . . . .	2	224	46	h	D	D	D	D	D	D	D	D
332710	Machine shops . . . . .	2	224	46	h	D	D	D	D	D	D	D	D
33272	Turned product & screw, nut, & bolt mfg . . . . .	1	27	12	f	D	D	D	D	D	D	D	D
332721	Precision turned product mfg . . . . .	—	22	9	f	D	D	D	D	D	D	D	D

**Table 3. Industry Statistics for Counties: 1997—Con.**

[Includes data for industry groups and industries with 500 employees or more. For information on geographic areas followed by \* and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
<b>31-33</b>	<b>MARICOPA COUNTY, AZ—Con.</b>												
	<b>Manufacturing—Con.</b>												
332	Fabricated metal product mfg—Con.												
3328	Coating, engraving, heat treating, & allied activities.	1	78	20	1 434	37 273	1 126	2 075	23 979	78 643	27 577	106 956	5 355
33281	Coating, engraving, heat treating, & allied activities.....	1	78	20	1 434	37 273	1 126	2 075	23 979	78 643	27 577	106 956	5 355
332813	Electroplating, plating, polishing, anodizing, & coloring .....	2	38	10	731	19 832	565	1 101	12 445	36 549	12 449	49 666	D
3329	Other fabricated metal product mfg .....	—	54	16	2 980	109 301	1 680	3 594	37 426	458 525	290 551	740 450	12 449
33291	Metal valve mfg .....	—	9	5	g	D	D	D	D	D	D	D	D
332912	Fluid power valve & hose fitting mfg .....	—	6	4	g	D	D	D	D	D	D	D	D
33299	All other fabricated metal product mfg .....	1	45	11	f	D	D	D	D	D	D	D	D
332999	All other miscellaneous fabricated metal product mfg .....	1	31	7	f	D	D	D	D	D	D	D	1 320
333	Machinery mfg .....	1	232	68	i	D	D	D	D	D	D	D	D
3331	Agriculture, construction, & mining machinery mfg....	—	16	4	g	D	D	D	D	D	D	D	D
33311	Agricultural implement mfg .....	—	7	1	g	D	D	D	D	D	D	D	D
333112	Lawn & garden tractor & home lawn & garden equipment mfg .....	—	1	1	g	D	D	D	D	D	D	D	D
3332	Industrial machinery mfg ..	1	47	18	2 064	72 347	1 072	2 162	34 384	223 413	150 168	369 093	25 510
33329	Other industrial machinery mfg .....	1	38	15	g	D	D	D	D	D	D	D	D
333295	Semiconductor machinery mfg .....	—	16	8	g	D	D	D	D	D	D	D	D
3333	Commercial & service industry machinery mfg ..	2	35	8	551	18 468	354	661	8 704	56 968	65 384	124 050	3 565
33331	Commercial & service industry machinery mfg .....	2	35	8	551	18 468	354	661	8 704	56 968	65 384	124 050	3 565
3334	Ventilation, heating, AC, & commercial refrigeration equip mfg .....	—	18	6	g	D	D	D	D	D	D	D	D
33341	Ventilation, heating, AC, & commercial refrigeration equip mfg ..	—	18	6	g	D	D	D	D	D	D	D	D
333415	AC & warm air heating & commercial/ industrial refig equip mfg .....	—	11	5	g	D	D	D	D	D	D	D	D
3335	Metalworking machinery mfg .....	3	81	20	1 349	47 636	976	1 807	29 834	102 055	40 904	136 205	7 545
33351	Metalworking machinery mfg .....	3	81	20	1 349	47 636	976	1 807	29 834	102 055	40 904	136 205	7 545
333514	Special die & tool, die set, jig, & fixture mfg ..	2	40	8	500	18 149	355	693	12 097	34 871	11 475	46 178	2 607
3339	Other general-purpose machinery mfg .....	2	30	9	f	D	D	D	D	D	D	D	D
334	Computer & electronic product mfg .....	—	270	124	k	D	D	D	D	D	D	D	D
3341	Computer & peripheral equipment mfg .....	2	39	12	g	D	D	D	D	D	D	D	13 034
33411	Computer & peripheral equipment mfg .....	2	39	12	g	D	D	D	D	D	D	D	13 034
334119	Other computer peripheral equipment mfg .....	2	24	8	606	22 465	216	441	5 534	38 307	55 220	93 543	D
3342	Communications equipment mfg .....	1	39	18	i	D	D	D	D	D	D	D	D
33421	Telephone apparatus mfg .....	3	9	6	1 274	54 628	723	1 598	27 255	154 938	78 696	235 233	9 454
334210	Telephone apparatus mfg .....	3	9	6	1 274	54 628	723	1 598	27 255	154 938	78 696	235 233	9 454
33422	Radio & TV broadcasting & wireless communications equipment mfg .....	—	24	10	5 305	114 592	1 883	3 348	46 051	544 830	218 427	772 277	32 303
334220	Radio & TV broadcasting & wireless communications equipment mfg .....	—	24	10	5 305	114 592	1 883	3 348	46 051	544 830	218 427	772 277	32 303

**Table 3. Industry Statistics for Counties: 1997—Con.**

[Includes data for industry groups and industries with 500 employees or more. For information on geographic areas followed by \* and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

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			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
	<b>MARICOPA COUNTY, AZ—Con.</b>												
<b>31-33</b>	<b>Manufacturing—Con.</b>												
334	Computer & electronic product mfg—Con.												
3343	Audio & video equipment mfg . . . . .	—	6	4	f	D	D	D	D	D	D	D	D
33431	Audio & video equipment mfg . . . . .	—	6	4	f	D	D	D	D	D	D	D	D
334310	Audio & video equipment mfg . . . . .	—	6	4	f	D	D	D	D	D	D	D	D
3344	Semiconductor & other electronic component mfg . . . . .	—	119	63	k	D	D	D	D	D	D	D	D
33441	Semiconductor & other electronic component mfg . . . . .	—	119	63	k	D	D	D	D	D	D	D	D
334412	Bare printed circuit board mfg . . . . .	—	30	16	3 092	87 879	2 404	5 018	57 650	303 618	175 519	471 885	43 776
334413	Semiconductor & related device mfg . . . . .	—	41	23	16 808	899 375	7 934	18 369	221 208	9 458 874	632 694	10 056 005	D
334417	Electronic connector mfg . . . . .	—	5	2	f	D	D	D	D	D	D	D	D
334418	Printed circuit assembly (electronic assembly) mfg . . . . .	—	10	8	h	D	D	D	D	D	D	D	D
334419	Other electronic component mfg . . . . .	2	25	8	559	19 616	391	745	13 343	32 516	20 273	57 125	1 905
3345	Navigational, measuring, medical, & control instruments mfg . . . . .	—	59	23	i	D	D	D	D	D	D	D	D
33451	Navigational, measuring, medical, & control instruments mfg . . . . .	—	59	23	i	D	D	D	D	D	D	D	D
334511	Search, detection, navigation, & guidance instrument mfg . . . . .	—	13	6	i	D	D	D	D	D	D	D	D
334513	Industrial process control instrument mfg . . . . .	—	10	4	g	D	D	D	D	D	D	D	D
335	Electrical equipment, appliance, & component mfg . . . . .	—	66	23	h	D	D	D	D	D	D	D	D
3351	Electric lighting equipment mfg . . . . .	—	17	5	f	D	D	D	D	D	D	D	D
33512	Lighting fixture mfg . . . . .	—	17	5	f	D	D	D	D	D	D	D	D
3359	Other electrical equipment & component mfg . . . . .	—	27	11	2 493	78 973	1 580	3 281	40 785	238 061	265 102	526 744	18 684
33592	Communication & energy wire & cable mfg . . . . .	—	4	4	g	D	D	D	D	D	D	D	D
335929	Other communication & energy wire mfg . . . . .	—	4	4	g	D	D	D	D	D	D	D	D
336	Transportation equipment mfg . . . . .	—	172	70	j	D	D	D	D	D	D	D	D
3363	Motor vehicle parts mfg . . . . .	—	67	27	i	D	D	D	D	D	D	D	D
33631	Motor vehicle gasoline engine & engine parts mfg . . . . .	1	15	4	553	10 126	431	491	6 265	19 095	24 571	43 808	2 216
336312	Gasoline engine & engine parts mfg . . . . .	—	12	3	f	D	D	D	D	D	D	D	D
33636	Motor vehicle seating & interior trim mfg . . . . .	3	5	4	588	15 245	472	858	7 916	38 954	35 955	75 302	D
336360	Motor vehicle seating & interior trim mfg . . . . .	3	5	4	588	15 245	472	858	7 916	38 954	35 955	75 302	D
33639	Other motor vehicle parts mfg . . . . .	—	24	7	h	D	D	D	D	D	D	D	D
336399	All other motor vehicle parts mfg . . . . .	—	24	7	h	D	D	D	D	D	D	D	D
3364	Aerospace product & parts mfg . . . . .	—	56	33	j	D	D	D	D	D	D	D	104 682
33641	Aerospace product & parts mfg . . . . .	—	56	33	j	D	D	D	D	D	D	D	104 682
336411	Aircraft mfg . . . . .	—	2	2	h	D	D	D	D	D	D	D	D
336412	Aircraft engine & engine parts mfg . . . . .	—	18	15	i	D	D	D	D	D	D	D	D
336413	Other aircraft part & auxiliary equipment mfg . . . . .	—	33	15	g	D	D	D	D	D	D	D	D
336414	Guided missile & space vehicle mfg . . . . .	—	1	1	f	D	D	D	D	D	D	D	D

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[Includes data for industry groups and industries with 500 employees or more. For information on geographic areas followed by \* and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
<b>MARICOPA COUNTY, AZ—Con.</b>													
<b>31-33</b>	<b>Manufacturing—Con.</b>												
337	Furniture & related product mfg .....	1	246	64	6 526	134 262	5 278	9 928	94 575	278 313	235 701	511 960	15 902
3371	Household & institutional furniture & kitchen cabinet mfg .....	1	175	41	h	D	D	D	D	D	D	D	D
33711	Wood kitchen cabinet & counter top mfg .....	1	77	15	g	D	D	D	D	D	D	D	D
337110	Wood kitchen cabinet & counter top mfg ...	1	77	15	g	D	D	D	D	D	D	D	D
33712	Household & institutional furniture mfg .....	1	98	26	h	D	D	D	D	D	D	D	D
337122	Nonupholstered wood household furniture mfg .....	1	59	14	h	D	D	D	D	D	D	D	D
3372	Office furniture (including fixtures) mfg .....	2	51	17	g	D	D	D	D	D	D	D	D
33721	Office furniture (including fixtures) mfg .....	2	51	17	g	D	D	D	D	D	D	D	D
339	Miscellaneous mfg .....	1	325	45	h	D	D	D	D	D	D	D	D
3391	Medical equipment & supplies mfg .....	2	129	8	1 202	42 224	575	975	12 674	147 278	25 008	161 309	D
33911	Medical equipment & supplies mfg .....	2	129	8	1 202	42 224	575	975	12 674	147 278	25 008	161 309	D
339112	Surgical & medical instrument mfg .....	5	8	2	f	D	D	D	D	D	D	D	D
339116	Dental laboratories ...	5	101	6	541	13 879	410	667	9 113	30 839	11 204	43 337	D
3399	Other miscellaneous mfg ...	1	196	37	h	D	D	D	D	D	D	D	D
33992	Sporting & athletic goods mfg .....	—	21	5	1 258	39 942	920	1 832	22 164	98 441	75 286	178 717	D
339920	Sporting & athletic goods mfg .....	—	21	5	1 258	39 942	920	1 832	22 164	98 441	75 286	178 717	D
33995	Sign mfg .....	—	79	12	g	D	D	D	D	D	D	D	D
339950	Sign mfg .....	—	79	12	g	D	D	D	D	D	D	D	D
33999	All other miscellaneous mfg .....	4	43	16	873	23 101	602	2 308	10 226	48 816	34 902	82 790	4 334
339999	All other miscellaneous mfg .....	3	34	14	701	19 363	462	2 015	7 869	40 465	29 124	68 731	2 959
<b>MOHAVE COUNTY, AZ</b>													
<b>31-33</b>	<b>Manufacturing ....</b>	<b>—</b>	<b>156</b>	<b>33</b>	<b>3 807</b>	<b>85 202</b>	<b>3 166</b>	<b>5 735</b>	<b>60 768</b>	<b>343 952</b>	<b>398 925</b>	<b>760 367</b>	<b>17 181</b>
333	Machinery mfg .....	—	8	1	f	D	D	D	D	D	D	D	D
3339	Other general-purpose machinery mfg .....	—	3	1	f	D	D	D	D	D	D	D	D
33399	All other general-purpose machinery mfg .....	—	2	1	f	D	D	D	D	D	D	D	D
333991	Power-driven handtool mfg .....	—	1	1	f	D	D	D	D	D	D	D	D
<b>NAVAJO COUNTY, AZ</b>													
<b>31-33</b>	<b>Manufacturing ....</b>	<b>—</b>	<b>45</b>	<b>8</b>	<b>1 346</b>	<b>44 190</b>	<b>1 130</b>	<b>2 383</b>	<b>34 654</b>	<b>100 891</b>	<b>170 844</b>	<b>275 919</b>	<b>D</b>
321	Wood product mfg .....	—	12	5	539	11 789	504	1 070	10 411	17 214	39 262	59 641	D
322	Paper mfg .....	—	1	1	f	D	D	D	D	D	D	D	D
3221	Pulp, paper, & paperboard mills .....	—	1	1	f	D	D	D	D	D	D	D	D
32212	Paper mills .....	—	1	1	f	D	D	D	D	D	D	D	D
322122	Newsprint mills .....	—	1	1	f	D	D	D	D	D	D	D	D



**Table 3. Industry Statistics for Counties: 1997—Con.**

[Includes data for industry groups and industries with 500 employees or more. For information on geographic areas followed by \* and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
<b>PIMA COUNTY, AZ</b>													
<b>31-33</b>	<b>Manufacturing .....</b>	-	<b>764</b>	<b>200</b>	<b>26 746</b>	<b>1 064 717</b>	<b>15 013</b>	<b>29 020</b>	<b>356 897</b>	<b>2 350 070</b>	<b>1 790 042</b>	<b>4 455 183</b>	<b>154 291</b>
311	Food mfg .....	1	44	8	654	11 112	426	653	6 760	23 711	43 012	66 900	1 165
312	Beverage & tobacco product mfg .....	-	9	3	575	14 417	190	344	4 398	42 906	83 572	126 507	4 475
3121	Beverage mfg .....	-	9	3	575	14 417	190	344	4 398	42 906	83 572	126 507	4 475
31211	Soft drink & ice mfg .....	-	5	3	f	D	D	D	D	D	D	D	D
323	Printing & related support activities .....	1	111	20	1 220	28 552	905	1 400	16 665	66 268	36 734	103 010	8 350
3231	Printing & related support activities .....	1	111	20	1 220	28 552	905	1 400	16 665	66 268	36 734	103 010	8 350
32311	Printing .....	1	97	19	g	D	D	D	D	D	D	D	D
323110	Commercial lithographic printing ..	1	49	14	764	18 563	558	873	10 810	38 520	23 788	62 287	7 323
326	Plastics & rubber products mfg .....	-	39	17	1 100	25 788	870	1 672	17 591	63 454	55 218	119 096	5 677
3261	Plastics product mfg .....	-	30	13	f	D	D	D	D	D	D	D	D
32619	Other plastics product mfg .....	-	22	11	804	18 025	652	1 280	12 928	45 228	37 813	83 482	D
326199	All other plastics product mfg .....	-	17	9	719	15 904	595	1 169	11 563	41 106	35 303	76 877	D
327	Nonmetallic mineral product mfg .....	1	59	25	1 796	45 108	1 177	2 189	28 270	176 645	105 860	285 484	17 891
3271	Clay product & refractory mfg .....	-	21	9	532	12 356	384	725	6 677	25 915	14 011	41 523	1 457
3273	Cement & concrete product mfg .....	-	20	11	1 041	27 539	626	1 177	18 182	137 846	77 901	216 925	15 621
32732	Ready-mix concrete mfg .....	2	8	6	f	D	D	D	D	D	D	D	D
327320	Ready-mix concrete mfg .....	2	8	6	f	D	D	D	D	D	D	D	D
332	Fabricated metal product mfg .....	-	123	27	3 768	109 668	3 037	6 086	67 053	264 655	146 070	410 225	13 877
3323	Architectural & structural metals mfg .....	-	39	9	1 500	44 656	1 237	2 555	26 314	102 327	66 348	168 501	3 060
33232	Ornamental & architectural metal products mfg .....	-	24	4	1 190	35 429	1 023	2 184	21 430	81 462	53 092	134 483	2 195
332322	Sheet metal work mfg .....	-	11	3	642	22 486	522	1 066	10 882	48 713	38 566	87 596	D
332323	Ornamental & architectural metal work mfg .....	-	11	1	f	D	D	D	D	D	D	D	D
3325	Hardware mfg .....	-	3	2	f	D	D	D	D	D	D	D	D
33251	Hardware mfg .....	-	3	2	f	D	D	D	D	D	D	D	D
332510	Hardware mfg .....	-	3	2	f	D	D	D	D	D	D	D	D
3327	Machine shops, turned product, & screw, nut, & bolt mfg .....	2	45	10	f	D	D	D	D	D	D	D	D
33271	Machine shops .....	1	42	8	581	17 975	431	751	11 933	30 976	13 337	43 934	3 125
332710	Machine shops .....	1	42	8	581	17 975	431	751	11 933	30 976	13 337	43 934	3 125
333	Machinery mfg .....	2	52	18	1 988	64 023	1 267	2 485	28 525	156 508	123 951	271 841	9 535
3333	Commercial & service industry machinery mfg ..	3	20	7	865	27 387	435	765	8 610	76 899	52 564	122 016	3 440
33331	Commercial & service industry machinery mfg .....	3	20	7	865	27 387	435	765	8 610	76 899	52 564	122 016	3 440
334	Computer & electronic product mfg .....	-	56	28	3 904	174 330	1 774	3 678	58 408	551 380	250 812	786 966	43 975
3344	Semiconductor & other electronic component mfg .....	-	22	10	1 731	70 383	872	2 077	29 336	266 643	53 860	314 961	30 176
33441	Semiconductor & other electronic component mfg .....	-	22	10	1 731	70 383	872	2 077	29 336	266 643	53 860	314 961	30 176
334413	Semiconductor & related device mfg ...	-	5	3	g	D	D	D	D	D	D	D	D
3345	Navigational, measuring, medical, & control instruments mfg .....	-	17	8	g	D	D	D	D	D	D	D	D
33451	Navigational, measuring, medical, & control instruments mfg .....	-	17	8	g	D	D	D	D	D	D	D	D
334511	Search, detection, navigation, & guidance instrument mfg .....	-	2	1	f	D	D	D	D	D	D	D	D
336	Transportation equipment mfg .....	-	19	6	i	D	D	D	D	D	D	D	25 547
3364	Aerospace product & parts mfg .....	-	7	6	i	D	D	D	D	D	D	D	D
33641	Aerospace product & parts mfg .....	-	7	6	i	D	D	D	D	D	D	D	D
336411	Aircraft mfg .....	-	2	2	g	D	D	D	D	D	D	D	D
336414	Guided missile & space vehicle mfg ...	-	1	1	i	D	D	D	D	D	D	D	D

**Table 3. Industry Statistics for Counties: 1997—Con.**

[Includes data for industry groups and industries with 500 employees or more. For information on geographic areas followed by \* and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
<b>PIMA COUNTY, AZ—Con.</b>													
<b>31-33</b>	<b>Manufacturing—Con.</b>												
339	Miscellaneous mfg . . . . .	1	86	17	1 607	43 405	1 063	1 500	15 853	103 916	143 577	245 331	11 358
3391	Medical equipment & supplies mfg . . . . .	1	46	7	704	23 166	428	620	7 772	65 232	117 416	182 458	8 474
33911	Medical equipment & supplies mfg . . . . .	1	46	7	704	23 166	428	620	7 772	65 232	117 416	182 458	8 474
3399	Other miscellaneous mfg . . . . .	—	40	10	903	20 239	635	880	8 081	38 684	26 161	62 873	2 884
33992	Sporting & athletic goods mfg . . . . .	—	5	4	513	12 523	349	448	3 796	24 881	17 311	40 472	D
339920	Sporting & athletic goods mfg . . . . .	—	5	4	513	12 523	349	448	3 796	24 881	17 311	40 472	D
<b>PINAL COUNTY, AZ</b>													
<b>31-33</b>	<b>Manufacturing . . . . .</b>	<b>—</b>	<b>74</b>	<b>30</b>	<b>4 594</b>	<b>154 799</b>	<b>3 466</b>	<b>7 306</b>	<b>101 165</b>	<b>723 901</b>	<b>1 764 638</b>	<b>2 530 608</b>	<b>119 701</b>
311	Food mfg . . . . .	—	8	4	f	D	D	D	D	D	D	D	D
322	Paper mfg . . . . .	—	1	1	f	D	D	D	D	D	D	D	D
3222	Converted paper product mfg . . . . .	—	1	1	f	D	D	D	D	D	D	D	D
32229	Other converted paper product mfg . . . . .	—	1	1	f	D	D	D	D	D	D	D	D
322299	All other converted paper product mfg . . . . .	—	1	1	f	D	D	D	D	D	D	D	D
331	Primary metal mfg . . . . .	—	5	4	g	D	D	D	D	D	D	D	D
3314	Nonferrous metal (except aluminum) production & processing . . . . .	—	4	4	g	D	D	D	D	D	D	D	D
33141	Nonferrous metal (except aluminum) smelting & refining . . . . .	—	3	3	g	D	D	D	D	D	D	D	D
331411	Primary smelting & refining of copper . . . . .	—	3	3	g	D	D	D	D	D	D	D	D
332	Fabricated metal product mfg . . . . .	—	10	3	626	14 707	449	819	8 856	27 225	37 088	67 006	9 041
3323	Architectural & structural metals mfg . . . . .	—	4	2	f	D	D	D	D	D	D	D	D
<b>SANTA CRUZ COUNTY, AZ</b>													
<b>31-33</b>	<b>Manufacturing . . . . .</b>	<b>3</b>	<b>35</b>	<b>9</b>	<b>f</b>	<b>D</b>	<b>D</b>	<b>D</b>	<b>D</b>	<b>D</b>	<b>D</b>	<b>D</b>	<b>3 119</b>
<b>YAVAPAI COUNTY, AZ</b>													
<b>31-33</b>	<b>Manufacturing . . . . .</b>	<b>1</b>	<b>189</b>	<b>36</b>	<b>3 511</b>	<b>91 255</b>	<b>2 625</b>	<b>4 979</b>	<b>62 653</b>	<b>262 364</b>	<b>178 830</b>	<b>445 811</b>	<b>15 848</b>
331	Primary metal mfg . . . . .	—	5	1	f	D	D	D	D	D	D	D	D
3315	Foundries . . . . .	—	5	1	f	D	D	D	D	D	D	D	D
33152	Nonferrous metal foundries . . . . .	—	5	1	f	D	D	D	D	D	D	D	D
331522	Nonferrous (except aluminum) die-casting foundries . . . . .	—	1	1	f	D	D	D	D	D	D	D	D
332	Fabricated metal product mfg . . . . .	1	34	6	997	30 113	759	1 847	22 337	89 983	40 913	130 237	2 405
3323	Architectural & structural metals mfg . . . . .	—	8	1	f	D	D	D	D	D	D	D	D
<b>YUMA COUNTY, AZ</b>													
<b>31-33</b>	<b>Manufacturing . . . . .</b>	<b>—</b>	<b>66</b>	<b>17</b>	<b>3 041</b>	<b>54 607</b>	<b>2 701</b>	<b>5 266</b>	<b>42 916</b>	<b>158 034</b>	<b>232 735</b>	<b>389 463</b>	<b>10 278</b>
336	Transportation equipment mfg . . . . .	—	3	1	g	D	D	D	D	D	D	D	D
3363	Motor vehicle parts mfg . . . . .	—	3	1	g	D	D	D	D	D	D	D	D
33632	Motor vehicle electrical & electronic equipment mfg . . . . .	—	1	1	g	D	D	D	D	D	D	D	D
336322	Other motor vehicle electrical & electronic equipment mfg . . . . .	—	1	1	g	D	D	D	D	D	D	D	D

<sup>1</sup>Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

<sup>2</sup>Industries with 500 employees or more are shown. Some statistics are withheld to avoid disclosing data for individual companies. If employment is 500 or more, number of establishments is shown and employment-size range is indicated by one of the following symbols: c–100 to 249 employees; e–250 to 499 employees; f–500 to 999 employees; g–1,000 to 2,499 employees; h–2,500 to 4,999 employees; i–5,000 to 9,999 employees; j–10,000 to 24,999 employees; k–25,000 to 49,999 employees; l–50,000 to 99,999 employees; m–100,000 employees or more.

**Table 4. Industry Statistics for Places: 1997**

[Includes data for industry groups and industries with 500 employees or more. For information on geographic areas followed by \* and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
<b>CASA GRANDE, AZ</b>													
<b>31-33</b>	<b>Manufacturing . . . .</b>	-	<b>27</b>	<b>13</b>	<b>1 626</b>	<b>52 124</b>	<b>1 304</b>	<b>2 780</b>	<b>33 260</b>	<b>141 970</b>	<b>162 726</b>	<b>307 119</b>	<b>16 779</b>
322	Paper mfg . . . . .	-	1	1	f	D	D	D	D	D	D	D	D
3222	Converted paper product mfg . . . . .	-	1	1	f	D	D	D	D	D	D	D	D
32229	Other converted paper product mfg . . . . .	-	1	1	f	D	D	D	D	D	D	D	D
322299	All other converted paper product mfg . . . . .	-	1	1	f	D	D	D	D	D	D	D	D
<b>CHANDLER, AZ</b>													
<b>31-33</b>	<b>Manufacturing . . . .</b>	-	<b>135</b>	<b>50</b>	<b>9 668</b>	<b>351 989</b>	<b>6 425</b>	<b>12 854</b>	<b>164 931</b>	<b>3 984 780</b>	<b>762 312</b>	<b>4 744 276</b>	<b>841 322</b>
332	Fabricated metal product mfg . . . . .	-	24	6	664	22 682	472	1 045	12 231	38 463	71 138	109 738	1 442
333	Machinery mfg . . . . .	-	16	6	1 530	32 205	1 343	2 501	24 797	141 861	94 798	236 268	D
3331	Agriculture, construction, & mining machinery mfg . . . . .	-	1	1	g	D	D	D	D	D	D	D	D
33311	Agricultural implement mfg . . . . .	-	1	1	g	D	D	D	D	D	D	D	D
333112	Lawn & garden tractor & home lawn & garden equipment mfg . . . . .	-	1	1	g	D	D	D	D	D	D	D	D
334	Computer & electronic product mfg . . . . .	-	22	10	4 800	213 880	2 613	5 350	75 984	3 567 268	342 798	3 909 350	D
3344	Semiconductor & other electronic component mfg . . . . .	-	12	8	4 463	199 735	2 444	5 019	71 623	3 535 967	312 416	3 846 744	D
33441	Semiconductor & other electronic component mfg . . . . .	-	12	8	4 463	199 735	2 444	5 019	71 623	3 535 967	312 416	3 846 744	D
334412	Bare printed circuit board mfg . . . . .	-	3	2	f	D	D	D	D	D	D	D	D
334413	Semiconductor & related device mfg . . . . .	-	5	4	3 550	176 458	1 814	3 713	56 094	3 392 935	264 256	3 652 070	D
<b>FLAGSTAFF, AZ</b>													
<b>31-33</b>	<b>Manufacturing . . . .</b>	-	<b>62</b>	<b>9</b>	<b>1 798</b>	<b>67 676</b>	<b>902</b>	<b>1 793</b>	<b>22 751</b>	<b>307 423</b>	<b>193 292</b>	<b>505 163</b>	<b>15 538</b>
339	Miscellaneous mfg . . . . .	-	8	1	g	D	D	D	D	D	D	D	D
3391	Medical equipment & supplies mfg . . . . .	-	6	1	g	D	D	D	D	D	D	D	D
33911	Medical equipment & supplies mfg . . . . .	-	6	1	g	D	D	D	D	D	D	D	D
339113	Surgical appliance & supplies mfg . . . . .	-	3	1	g	D	D	D	D	D	D	D	D
<b>GILBERT, AZ</b>													
<b>31-33</b>	<b>Manufacturing . . . .</b>	<b>1</b>	<b>78</b>	<b>19</b>	<b>2 228</b>	<b>57 446</b>	<b>1 771</b>	<b>3 756</b>	<b>41 467</b>	<b>150 797</b>	<b>160 477</b>	<b>311 534</b>	<b>18 546</b>
326	Plastics & rubber products mfg . . . . .	-	7	2	g	D	D	D	D	D	D	D	D
3261	Plastics product mfg . . . . .	-	6	1	f	D	D	D	D	D	D	D	D
32619	Other plastics product mfg . . . . .	-	4	1	f	D	D	D	D	D	D	D	D
326199	All other plastics product mfg . . . . .	-	4	1	f	D	D	D	D	D	D	D	D
<b>GLENDALE, AZ</b>													
<b>31-33</b>	<b>Manufacturing . . . .</b>	-	<b>156</b>	<b>39</b>	<b>6 398</b>	<b>244 023</b>	<b>3 598</b>	<b>7 302</b>	<b>94 835</b>	<b>649 555</b>	<b>427 943</b>	<b>1 075 887</b>	<b>23 941</b>
321	Wood product mfg . . . . .	1	11	5	797	20 987	667	1 311	12 110	52 836	83 158	135 714	1 127
3219	Other wood product mfg . . . . .	-	7	2	581	16 065	479	926	8 576	37 445	62 514	99 935	937
32199	All other wood product mfg . . . . .	-	5	2	f	D	D	D	D	D	D	D	D
334	Computer & electronic product mfg . . . . .	-	15	4	h	D	D	D	D	D	D	D	D
3344	Semiconductor & other electronic component mfg . . . . .	-	7	1	f	D	D	D	D	D	D	D	D
33441	Semiconductor & other electronic component mfg . . . . .	-	7	1	f	D	D	D	D	D	D	D	D
334417	Electronic connector mfg . . . . .	-	1	1	f	D	D	D	D	D	D	D	D
3345	Navigational, measuring, medical, & control instruments mfg . . . . .	-	4	3	h	D	D	D	D	D	D	D	D
33451	Navigational, measuring, medical, & control instruments mfg . . . . .	-	4	3	h	D	D	D	D	D	D	D	D
334511	Search, detection, navigation, & guidance instrument mfg . . . . .	-	2	2	h	D	D	D	D	D	D	D	D

**Table 4. Industry Statistics for Places: 1997—Con.**

[Includes data for industry groups and industries with 500 employees or more. For information on geographic areas followed by \* and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
<b>GOODYEAR, AZ</b>													
31-33	Manufacturing ....	-	17	9	1 248	29 576	1 080	2 003	23 041	64 177	99 343	164 216	6 794
<b>KINGMAN, AZ</b>													
31-33	Manufacturing ....	-	27	6	857	19 643	667	1 447	12 729	100 955	73 831	175 754	6 245
<b>LAKE HAVASU CITY, AZ</b>													
31-33	Manufacturing ....	1	82	15	1 845	37 422	1 564	2 453	26 531	139 072	128 845	274 729	4 457
333	Machinery mfg .....	-	7	1	f	D	D	D	D	D	D	D	D
3339	Other general-purpose machinery mfg .....	-	3	1	f	D	D	D	D	D	D	D	D
33399	All other general-purpose machinery mfg .....	-	2	1	f	D	D	D	D	D	D	D	D
333991	Power-driven handtool mfg .....	-	1	1	f	D	D	D	D	D	D	D	D
<b>MARANA, AZ</b>													
31-33	Manufacturing ....	-	13	8	814	24 862	496	949	12 696	67 930	53 660	124 344	3 259
<b>MESA, AZ</b>													
31-33	Manufacturing ....	-	258	55	13 921	530 653	7 718	17 223	186 000	2 404 733	976 696	3 367 099	229 248
325	Chemical mfg .....	-	11	2	743	16 291	696	1 452	10 202	21 206	73 638	99 212	D
3259	Other chemical product mfg .....	-	3	2	f	D	D	D	D	D	D	D	D
32592	Explosives mfg .....	-	1	1	f	D	D	D	D	D	D	D	D
325920	Explosives mfg .....	-	1	1	f	D	D	D	D	D	D	D	D
332	Fabricated metal product mfg .....	-	39	13	720	22 024	535	961	13 747	58 955	44 060	102 263	4 203
334	Computer & electronic product mfg .....	-	24	8	i	D	D	D	D	D	D	D	D
3344	Semiconductor & other electronic component mfg .....	-	14	5	h	D	D	D	D	D	D	D	D
33441	Semiconductor & other electronic component mfg .....	-	14	5	h	D	D	D	D	D	D	D	D
334413	Semiconductor & related device mfg ...	-	4	2	h	D	D	D	D	D	D	D	D
336	Transportation equipment mfg .....	-	14	5	h	D	D	D	D	D	D	D	34 067
3363	Motor vehicle parts mfg ...	-	4	2	g	D	D	D	D	D	D	D	D
33639	Other motor vehicle parts mfg .....	-	2	2	g	D	D	D	D	D	D	D	D
336399	All other motor vehicle parts mfg .....	-	2	2	g	D	D	D	D	D	D	D	D
3364	Aerospace product & parts mfg .....	-	6	3	h	D	D	D	D	D	D	D	D
33641	Aerospace product & parts mfg .....	-	6	3	h	D	D	D	D	D	D	D	D
336411	Aircraft mfg .....	-	1	1	h	D	D	D	D	D	D	D	D
<b>NOGALES, AZ</b>													
31-33	Manufacturing ....	4	23	5	502	10 074	422	753	6 819	25 820	23 647	51 790	1 337
<b>PEORIA, AZ</b>													
31-33	Manufacturing ....	-	34	6	558	13 790	439	876	9 381	30 265	21 899	54 323	1 846

**Table 4. Industry Statistics for Places: 1997—Con.**

[Includes data for industry groups and industries with 500 employees or more. For information on geographic areas followed by \* and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

NAICS code	Geographic area and industry	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)	
		E <sup>1</sup>	Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)					Wages (\$1,000)
	<b>PHOENIX, AZ</b>												
<b>31-33</b>	<b>Manufacturing . . . .</b>	-	<b>1 706</b>	<b>557</b>	<b>69 401</b>	<b>2 532 435</b>	<b>43 093</b>	<b>87 471</b>	<b>1 069 292</b>	<b>10 283 805</b>	<b>4 480 619</b>	<b>14 649 584</b>	<b>569 613</b>
311	Food mfg . . . . .	2	72	27	3 265	91 730	1 943	3 792	47 066	254 130	339 926	603 099	13 096
3115	Dairy product mfg . . . . .	-	5	3	f	D	D	D	D	D	D	D	D
31151	Dairy product (except frozen) mfg . . . . .	-	4	2	f	D	D	D	D	D	D	D	D
311511	Fluid milk mfg . . . . .	-	2	2	f	D	D	D	D	D	D	D	D
3118	Bakeries & tortilla mfg . . . . .	1	31	12	1 670	42 794	1 021	1 800	21 963	139 256	62 035	201 368	D
31181	Bread & bakery product mfg . . . . .	1	27	10	1 478	39 880	886	1 616	19 893	131 717	57 381	189 032	3 736
311812	Commercial bakeries . . . . .	1	16	10	1 437	39 354	859	1 585	19 614	130 290	56 445	186 669	3 659
312	Beverage & tobacco product mfg . . . . .	-	9	8	816	24 799	290	653	5 655	64 254	103 945	166 864	11 422
3121	Beverage mfg . . . . .	-	9	8	816	24 799	290	653	5 655	64 254	103 945	166 864	11 422
31211	Soft drink & ice mfg . . . . .	-	8	8	f	D	D	D	D	D	D	D	D
312111	Soft drink mfg . . . . .	-	3	3	565	19 241	149	344	2 949	46 711	98 787	144 310	D
314	Textile product mills . . . . .	6	39	8	598	13 579	463	865	8 251	23 996	20 487	44 150	1 939
3149	Other textile product mills . . . . .	7	23	8	f	D	D	D	D	D	D	D	1 884
315	Apparel mfg . . . . .	3	23	5	897	13 670	539	1 086	8 355	14 199	26 320	43 156	1 025
321	Wood product mfg . . . . .	1	68	37	3 063	64 538	2 593	4 910	48 656	137 108	161 661	300 348	5 908
3219	Other wood product mfg . . . . .	1	63	35	2 819	60 097	2 371	4 435	45 129	125 204	146 608	273 482	4 774
32191	Millwork . . . . .	2	35	20	f	D	D	D	D	D	D	D	2 652
32199	All other wood product mfg . . . . .	-	16	9	1 454	31 870	1 293	2 558	25 628	78 169	95 733	173 789	D
321991	Manufactured home (mobile home) mfg . . . . .	-	4	3	f	D	D	D	D	D	D	D	396
321992	Prefabricated wood building mfg . . . . .	-	5	3	f	D	D	D	D	D	D	D	D
322	Paper mfg . . . . .	1	18	10	734	22 184	568	1 104	14 157	51 510	55 905	106 863	3 171
3222	Converted paper product mfg . . . . .	1	18	10	734	22 184	568	1 104	14 157	51 510	55 905	106 863	3 171
323	Printing & related support activities . . . . .	1	275	58	4 650	134 441	3 371	6 585	85 439	281 963	163 841	445 718	29 958
3231	Printing & related support activities . . . . .	1	275	58	4 650	134 441	3 371	6 585	85 439	281 963	163 841	445 718	29 958
32311	Printing . . . . .	1	242	50	3 864	108 809	2 753	5 268	67 907	233 448	155 873	389 143	28 402
323110	Commercial lithographic printing . . . . .	1	111	27	2 104	62 454	1 421	2 923	37 710	123 490	81 913	205 084	17 977
323114	Quick printing . . . . .	2	55	5	581	13 413	454	676	8 659	29 520	17 083	46 586	1 824
323116	Manifold business form printing . . . . .	-	13	7	535	15 887	385	782	10 433	46 659	32 409	79 151	4 744
32312	Support activities for printing . . . . .	1	33	8	786	25 632	618	1 317	17 532	48 515	7 968	56 575	1 556
325	Chemical mfg . . . . .	-	52	17	3 500	101 262	2 677	5 015	61 289	1 106 378	347 373	1 438 536	18 649
3254	Pharmaceutical & medicine mfg . . . . .	-	7	6	906	36 561	708	1 375	22 549	238 408	117 201	349 742	10 144
32541	Pharmaceutical & medicine mfg . . . . .	-	7	6	906	36 561	708	1 375	22 549	238 408	117 201	349 742	10 144
325412	Pharmaceutical preparation mfg . . . . .	-	6	5	f	D	D	D	D	D	D	D	D
3256	Soap, cleaning compound, & toilet preparation mfg . . . . .	-	11	3	g	D	D	D	D	D	D	D	4 905
32562	Toilet preparation mfg . . . . .	-	5	2	g	D	D	D	D	D	D	D	D
325620	Toilet preparation mfg . . . . .	-	5	2	g	D	D	D	D	D	D	D	D
326	Plastics & rubber products mfg . . . . .	2	83	40	2 594	63 420	1 885	3 589	39 057	144 558	134 228	277 593	15 932
3261	Plastics product mfg . . . . .	2	73	34	2 330	56 818	1 693	3 198	34 802	124 542	122 984	246 493	15 505
32619	Other plastics product mfg . . . . .	2	49	20	1 462	34 935	992	1 835	18 942	66 305	42 349	108 074	7 496
326199	All other plastics product mfg . . . . .	2	44	18	g	D	D	D	D	D	D	D	D
327	Nonmetallic mineral product mfg . . . . .	1	66	34	2 251	68 994	1 739	3 674	46 458	215 274	172 335	376 152	15 141
3273	Cement & concrete product mfg . . . . .	-	34	21	1 526	47 738	1 182	2 504	31 749	147 240	120 599	256 773	10 378
32733	Concrete pipe, brick, & block mfg . . . . .	-	11	10	532	16 702	404	963	11 051	74 191	44 380	106 870	4 044
32739	Other concrete product mfg . . . . .	1	17	9	f	D	D	D	D	D	D	D	4 602
327390	Other concrete product mfg . . . . .	1	17	9	f	D	D	D	D	D	D	D	4 602
331	Primary metal mfg . . . . .	-	16	8	1 361	39 274	1 090	2 177	28 758	93 042	109 733	201 055	10 650
3315	Foundries . . . . .	1	8	3	f	D	D	D	D	D	D	D	D
33151	Ferrous metal foundries . . . . .	-	5	2	f	D	D	D	D	D	D	D	D
331512	Steel investment foundries . . . . .	-	4	2	f	D	D	D	D	D	D	D	D

**Table 4. Industry Statistics for Places: 1997—Con.**

[Includes data for industry groups and industries with 500 employees or more. For information on geographic areas followed by \* and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
	<b>PHOENIX, AZ—Con.</b>												
<b>31-33</b>	<b>Manufacturing—Con.</b>												
332	Fabricated metal product mfg .....	1	346	111	8 009	247 539	5 769	11 497	145 273	549 521	420 061	976 471	36 603
3323	Architectural & structural metals mfg .....	—	81	36	3 111	90 523	1 966	4 141	42 699	215 755	205 508	430 619	8 989
33231	Plate work & fabricated structural product mfg ..	—	24	12	1 190	40 268	578	1 096	13 467	109 130	106 319	225 437	3 333
332312	Fabricated structural metal mfg .....	—	19	11	1 100	37 622	515	977	12 198	104 096	100 556	214 665	D
33232	Ornamental & architectural metal products mfg .....	—	57	24	1 921	50 255	1 388	3 045	29 232	106 625	99 189	205 182	5 656
332321	Metal window & door mfg .....	—	8	6	646	15 941	409	775	6 446	41 240	38 186	79 302	1 054
332322	Sheet metal work mfg ..	1	32	14	1 045	27 789	816	1 923	19 001	51 187	45 641	96 753	3 933
3327	Machine shops, turned product, & screw, nut, & bolt mfg .....	2	140	37	2 356	85 279	1 835	3 696	55 641	162 562	68 006	227 929	18 136
33271	Machine shops .....	2	122	28	1 881	69 990	1 445	2 940	45 292	130 614	52 357	180 304	15 047
332710	Machine shops .....	2	122	28	1 881	69 990	1 445	2 940	45 292	130 614	52 357	180 304	15 047
3328	Coating, engraving, heat treating, & allied activities ..	1	59	17	1 165	31 545	914	1 702	19 820	65 133	20 425	86 014	4 733
33281	Coating, engraving, heat treating, & allied activities .....	1	59	17	1 165	31 545	914	1 702	19 820	65 133	20 425	86 014	4 733
332813	Electroplating, plating, polishing, anodizing, & coloring .....	2	28	9	604	16 804	465	897	10 068	30 163	8 947	39 461	1 057
333	Machinery mfg .....	—	102	32	3 610	116 027	2 172	4 320	62 256	327 412	285 899	613 067	31 264
3332	Industrial machinery mfg ..	—	22	11	1 557	56 526	748	1 615	27 072	179 663	125 633	300 610	D
33329	Other industrial machinery mfg .....	—	20	10	g	D	D	D	D	D	D	D	D
333295	Semiconductor machinery mfg .....	—	5	4	g	D	D	D	D	D	D	D	D
3334	Ventilation, heating, AC, & commercial refrigeration equip mfg .....	—	9	3	939	24 512	667	1 279	14 209	64 934	62 298	131 635	2 705
33341	Ventilation, heating, AC, & commercial refrigeration equip mfg ..	—	9	3	939	24 512	667	1 279	14 209	64 934	62 298	131 635	2 705
333415	AC & warm air heating & commercial/ industrial refrig equip mfg .....	—	7	3	f	D	D	D	D	D	D	D	D
334	Computer & electronic product mfg .....	—	98	48	13 857	797 330	5 953	12 910	162 499	4 754 084	642 658	5 364 757	261 012
3342	Communications equipment mfg .....	1	18	7	803	29 872	360	696	10 237	100 940	60 861	160 650	4 555
3344	Semiconductor & other electronic component mfg .....	—	39	23	7 423	471 469	4 216	9 444	105 971	3 291 755	254 903	3 513 871	217 661
33441	Semiconductor & other electronic component mfg .....	—	39	23	7 423	471 469	4 216	9 444	105 971	3 291 755	254 903	3 513 871	217 661
334412	Bare printed circuit board mfg .....	—	10	8	g	D	D	D	D	D	D	D	D
334413	Semiconductor & related device mfg ...	—	9	7	i	D	D	D	D	D	D	D	183 340
3345	Navigational, measuring, medical, & control instruments mfg .....	—	19	9	h	D	D	D	D	D	D	D	D
33451	Navigational, measuring, medical, & control instruments mfg .....	—	19	9	h	D	D	D	D	D	D	D	D
334511	Search, detection, navigation, & guidance instrument mfg .....	—	4	3	h	D	D	D	D	D	D	D	D
334513	Industrial process control instrument mfg .....	—	3	3	g	D	D	D	D	D	D	D	D
335	Electrical equipment, appliance, & component mfg .....	—	32	12	2 556	78 487	1 663	3 394	42 991	266 928	266 071	559 315	D
3359	Other electrical equipment & component mfg .....	—	12	4	2 029	63 734	1 304	2 700	34 337	217 503	222 014	465 053	D
33592	Communication & energy wire & cable mfg .....	—	3	3	g	D	D	D	D	D	D	D	D
335929	Other communication & energy wire mfg ...	—	3	3	g	D	D	D	D	D	D	D	D

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NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
<b>PHOENIX, AZ—Con.</b>													
<b>31-33</b>	<b>Manufacturing—Con.</b>												
336	Transportation equipment mfg .....	—	93	38	9 978	475 257	4 428	9 384	148 693	1 613 143	926 715	2 439 951	75 965
3363	Motor vehicle parts mfg ...	2	37	13	1 528	37 175	1 172	1 932	17 569	74 473	78 384	155 695	6 458
3364	Aerospace product & parts mfg .....	—	30	17	7 506	412 052	2 479	5 962	114 388	1 479 922	753 357	2 133 722	67 006
33641	Aerospace product & parts mfg .....	—	30	17	7 506	412 052	2 479	5 962	114 388	1 479 922	753 357	2 133 722	67 006
336412	Aircraft engine & engine parts mfg ....	—	9	7	i	D	D	D	D	D	D	D	D
336413	Other aircraft part & auxiliary equipment mfg .....	—	19	10	g	D	D	D	D	D	D	D	D
337	Furniture & related product mfg .....	1	144	43	4 903	96 097	4 079	7 639	71 396	199 988	162 345	360 076	11 492
3371	Household & institutional furniture & kitchen cabinet mfg .....	1	99	28	3 500	69 850	3 023	6 042	54 320	143 665	115 709	256 959	8 311
33711	Wood kitchen cabinet & counter top mfg .....	1	48	10	731	18 037	598	1 121	11 620	40 295	19 270	59 663	1 009
337110	Wood kitchen cabinet & counter top mfg ...	1	48	10	731	18 037	598	1 121	11 620	40 295	19 270	59 663	1 009
33712	Household & institutional furniture mfg .....	1	51	18	2 769	51 813	2 425	4 921	42 700	103 370	96 439	197 296	7 302
337122	Nonupholstered wood household furniture mfg .....	1	31	10	2 357	41 986	2 086	4 284	35 918	82 573	83 340	163 814	D
3372	Office furniture (including fixtures) mfg .....	2	33	12	1 196	21 775	902	1 309	13 632	40 250	30 526	71 079	2 637
33721	Office furniture (including fixtures) mfg .....	2	33	12	1 196	21 775	902	1 309	13 632	40 250	30 526	71 079	2 637
339	Miscellaneous mfg .....	1	150	21	2 670	81 282	1 806	4 749	41 540	176 290	118 381	299 463	7 037
3399	Other miscellaneous mfg ..	1	97	19	2 388	73 382	1 598	4 382	36 771	157 741	110 234	272 321	6 245
33992	Sporting & athletic goods mfg .....	—	7	4	g	D	D	D	D	D	D	D	D
339920	Sporting & athletic goods mfg .....	—	7	4	g	D	D	D	D	D	D	D	D
33995	Sign mfg .....	—	50	7	643	21 439	365	760	9 769	37 828	17 778	54 582	1 536
339950	Sign mfg .....	—	50	7	643	21 439	365	760	9 769	37 828	17 778	54 582	1 536
<b>PRESCOTT, AZ</b>													
<b>31-33</b>	<b>Manufacturing ....</b>	<b>1</b>	<b>65</b>	<b>13</b>	<b>1 509</b>	<b>36 723</b>	<b>1 221</b>	<b>2 083</b>	<b>25 483</b>	<b>106 421</b>	<b>64 568</b>	<b>177 963</b>	<b>3 226</b>
331	Primary metal mfg .....	—	2	1	f	D	D	D	D	D	D	D	D
3315	Foundries .....	—	2	1	f	D	D	D	D	D	D	D	D
33152	Nonferrous metal foundries .....	—	2	1	f	D	D	D	D	D	D	D	D
331522	Nonferrous (except aluminum) die-casting foundries .....	—	1	1	f	D	D	D	D	D	D	D	D
<b>PRESCOTT VALLEY, AZ</b>													
<b>31-33</b>	<b>Manufacturing ....</b>	<b>—</b>	<b>30</b>	<b>7</b>	<b>852</b>	<b>24 610</b>	<b>607</b>	<b>1 517</b>	<b>17 841</b>	<b>64 680</b>	<b>47 474</b>	<b>110 839</b>	<b>D</b>
332	Fabricated metal product mfg .....	—	8	2	540	16 057	376	1 034	11 966	38 738	25 309	64 469	D
<b>QUEEN CREEK, AZ *</b>													
<b>31-33</b>	<b>Manufacturing ....</b>	<b>—</b>	<b>5</b>	<b>3</b>	<b>g</b>	<b>D</b>	<b>D</b>	<b>D</b>	<b>D</b>	<b>D</b>	<b>D</b>	<b>D</b>	<b>D</b>
336	Transportation equipment mfg .....	—	1	1	g	D	D	D	D	D	D	D	D
3363	Motor vehicle parts mfg ...	—	1	1	g	D	D	D	D	D	D	D	D
33639	Other motor vehicle parts mfg .....	—	1	1	g	D	D	D	D	D	D	D	D
336399	All other motor vehicle parts mfg .....	—	1	1	g	D	D	D	D	D	D	D	D

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NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
<b>SCOTTSDALE, AZ</b>													
<b>31-33</b>	<b>Manufacturing ....</b>	<b>1</b>	<b>257</b>	<b>48</b>	<b>8 254</b>	<b>192 079</b>	<b>3 865</b>	<b>6 933</b>	<b>87 898</b>	<b>756 260</b>	<b>366 858</b>	<b>1 128 229</b>	<b>48 154</b>
334	Computer & electronic product mfg.....	-	36	12	5 577	118 945	2 054	3 645	47 628	555 155	214 202	777 407	D
3342	Communications equipment mfg.....	-	7	2	h	D	D	D	D	D	D	D	D
33422	Radio & TV broadcasting & wireless communications equipment mfg.....	-	3	2	h	D	D	D	D	D	D	D	D
334220	Radio & TV broadcasting & wireless communications equipment mfg.....	-	3	2	h	D	D	D	D	D	D	D	D
<b>TEMPE, AZ</b>													
<b>31-33</b>	<b>Manufacturing ....</b>	<b>-</b>	<b>498</b>	<b>166</b>	<b>24 105</b>	<b>865 170</b>	<b>15 432</b>	<b>32 509</b>	<b>404 842</b>	<b>3 345 256</b>	<b>2 088 212</b>	<b>5 414 828</b>	<b>319 109</b>
311	Food mfg.....	1	20	8	835	20 331	653	1 302	14 060	124 245	270 181	393 705	5 422
323	Printing & related support activities.....	4	77	12	1 077	28 327	790	1 501	17 374	58 710	37 943	95 566	5 486
3231	Printing & related support activities.....	4	77	12	1 077	28 327	790	1 501	17 374	58 710	37 943	95 566	5 486
32311	Printing.....	4	68	11	1 027	27 564	747	1 452	16 790	57 153	37 589	93 655	D
323110	Commercial lithographic printing ..	5	25	6	512	15 632	347	684	9 809	32 353	21 270	52 745	2 727
326	Plastics & rubber products mfg.....	1	33	14	1 090	32 225	755	1 554	18 286	64 458	38 817	102 730	5 216
3261	Plastics product mfg.....	1	28	10	778	22 085	563	1 158	13 656	47 245	30 295	77 300	D
32619	Other plastics product mfg.....	1	25	9	f	D	D	D	D	D	D	D	3 514
326199	All other plastics product mfg.....	1	24	8	705	19 802	517	1 060	12 367	42 688	26 266	68 707	3 514
332	Fabricated metal product mfg.....	-	87	21	3 587	128 033	2 188	4 822	53 107	501 070	284 819	777 355	19 906
3327	Machine shops, turned product, & screw, nut, & bolt mfg.....	1	44	11	f	D	D	D	D	D	D	D	7 569
33271	Machine shops.....	2	42	10	517	20 600	377	782	12 592	38 643	18 704	56 541	D
332710	Machine shops.....	2	42	10	517	20 600	377	782	12 592	38 643	18 704	56 541	D
3329	Other fabricated metal product mfg.....	-	12	4	g	D	D	D	D	D	D	D	D
33291	Metal valve mfg.....	-	2	2	g	D	D	D	D	D	D	D	D
332912	Fluid power valve & hose fitting mfg.....	-	2	2	g	D	D	D	D	D	D	D	D
333	Machinery mfg.....	4	47	16	1 148	42 348	825	1 501	23 778	91 796	51 593	138 743	5 879
3335	Metalworking machinery mfg.....	3	23	9	680	27 621	514	956	16 467	57 927	21 469	74 941	4 120
33351	Metalworking machinery mfg.....	3	23	9	680	27 621	514	956	16 467	57 927	21 469	74 941	4 120
334	Computer & electronic product mfg.....	-	62	39	10 671	421 900	6 656	14 783	190 577	2 037 726	1 047 943	3 091 087	232 604
3341	Computer & peripheral equipment mfg.....	-	4	2	f	D	D	D	D	D	D	D	5 887
33411	Computer & peripheral equipment mfg.....	-	4	2	f	D	D	D	D	D	D	D	5 887
3342	Communications equipment mfg.....	-	7	6	f	D	D	D	D	D	D	D	D
33421	Telephone apparatus mfg.....	-	2	2	f	D	D	D	D	D	D	D	D
334210	Telephone apparatus mfg.....	-	2	2	f	D	D	D	D	D	D	D	D
3344	Semiconductor & other electronic component mfg.....	-	34	24	i	D	D	D	D	D	D	D	D
33441	Semiconductor & other electronic component mfg.....	-	34	24	i	D	D	D	D	D	D	D	D
334412	Bare printed circuit board mfg.....	-	8	6	f	D	D	D	D	D	D	D	D
334413	Semiconductor & related device mfg...	-	16	9	h	D	D	D	D	D	D	D	D
334418	Printed circuit assembly (electronic assembly) mfg.....	-	5	5	h	D	D	D	D	D	D	D	45 213
3345	Navigational, measuring, medical, & control instruments mfg.....	7	14	5	774	31 422	553	1 115	18 442	49 969	66 560	118 722	D
33451	Navigational, measuring, medical, & control instruments mfg.....	7	14	5	774	31 422	553	1 115	18 442	49 969	66 560	118 722	D



**Table 4. Industry Statistics for Places: 1997—Con.**

[Includes data for industry groups and industries with 500 employees or more. For information on geographic areas followed by \* and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
<b>TEMPE, AZ—Con.</b>													
<b>31-33</b>	<b>Manufacturing—Con.</b>												
336	Transportation equipment mfg .....	2	29	18	2 299	91 799	1 474	3 006	44 137	184 218	142 317	332 742	28 144
3363	Motor vehicle parts mfg .....	4	10	8	746	21 525	600	1 032	12 194	45 751	53 076	99 877	4 402
3364	Aerospace product & parts mfg .....	—	12	8	1 366	63 940	718	1 622	26 346	122 266	76 804	204 448	22 400
33641	Aerospace product & parts mfg .....	—	12	8	1 366	63 940	718	1 622	26 346	122 266	76 804	204 448	22 400
336414	Guided missile & space vehicle mfg ...	—	1	1	f	D	D	D	D	D	D	D	D
339	Miscellaneous mfg .....	—	35	10	1 238	45 341	496	986	10 579	145 168	50 958	184 092	4 117
3391	Medical equipment & supplies mfg .....	—	15	5	663	27 460	176	297	3 528	112 098	10 878	111 309	D
33911	Medical equipment & supplies mfg .....	—	15	5	663	27 460	176	297	3 528	112 098	10 878	111 309	D
339112	Surgical & medical instrument mfg .....	—	3	2	f	D	D	D	D	D	D	D	D
3399	Other miscellaneous mfg ..	1	20	5	575	17 881	320	689	7 051	33 070	40 080	72 783	D
<b>TOLLESON, AZ</b>													
<b>31-33</b>	<b>Manufacturing ....</b>	<b>—</b>	<b>15</b>	<b>8</b>	<b>1 726</b>	<b>38 502</b>	<b>1 487</b>	<b>3 427</b>	<b>27 919</b>	<b>130 118</b>	<b>521 545</b>	<b>651 787</b>	<b>12 151</b>
311	Food mfg .....	—	4	4	1 417	31 687	1 241	2 932	23 211	110 113	484 166	595 899	D
3116	Meat product mfg .....	—	1	1	g	D	D	D	D	D	D	D	D
31161	Animal slaughtering & processing .....	—	1	1	g	D	D	D	D	D	D	D	D
311611	Animal (except poultry) slaughtering .....	—	1	1	g	D	D	D	D	D	D	D	D
<b>TUCSON, AZ</b>													
<b>31-33</b>	<b>Manufacturing ....</b>	<b>—</b>	<b>520</b>	<b>139</b>	<b>20 152</b>	<b>841 205</b>	<b>10 438</b>	<b>20 283</b>	<b>237 746</b>	<b>1 767 480</b>	<b>1 390 383</b>	<b>3 483 559</b>	<b>119 245</b>
311	Food mfg .....	1	36	8	602	10 548	391	620	6 427	22 441	41 819	64 432	1 013
312	Beverage & tobacco product mfg .....	—	3	2	f	D	D	D	D	D	D	D	D
3121	Beverage mfg .....	—	3	2	f	D	D	D	D	D	D	D	D
31211	Soft drink & ice mfg .....	—	3	2	f	D	D	D	D	D	D	D	D
323	Printing & related support activities .....	1	90	14	f	D	D	D	D	D	D	D	5 029
3231	Printing & related support activities .....	1	90	14	f	D	D	D	D	D	D	D	5 029
32311	Printing .....	1	79	13	f	D	D	D	D	D	D	D	4 921
326	Plastics & rubber products mfg .....	—	27	14	777	17 881	617	1 159	11 945	49 353	37 364	86 753	4 032
3261	Plastics product mfg .....	—	20	10	f	D	D	D	D	D	D	D	D
32619	Other plastics product mfg .....	—	13	8	513	10 758	418	803	7 681	33 059	23 786	56 900	D
327	Nonmetallic mineral product mfg .....	—	37	16	1 116	26 770	698	1 275	15 319	76 283	46 824	125 011	D
332	Fabricated metal product mfg .....	—	84	18	2 976	81 895	2 486	5 043	52 181	185 188	110 894	292 915	9 702
3323	Architectural & structural metals mfg .....	—	27	7	1 351	40 658	1 148	2 416	24 331	86 373	56 145	142 506	2 584
33232	Ornamental & architectural metal products mfg .....	—	18	4	1 144	34 469	993	2 139	20 842	76 451	51 757	128 142	2 113
332322	Sheet metal work mfg ..	—	9	3	f	D	D	D	D	D	D	D	D
332323	Ornamental & architectural metal work mfg .....	—	7	1	f	D	D	D	D	D	D	D	D
3325	Hardware mfg .....	—	3	2	f	D	D	D	D	D	D	D	D
33251	Hardware mfg .....	—	3	2	f	D	D	D	D	D	D	D	D
332510	Hardware mfg .....	—	3	2	f	D	D	D	D	D	D	D	D
333	Machinery mfg .....	3	30	11	1 085	35 695	585	1 091	13 733	87 313	56 544	136 906	4 995
3333	Commercial & service industry machinery mfg ..	3	14	6	723	23 912	337	590	6 595	67 399	42 974	103 151	3 121
33331	Commercial & service industry machinery mfg .....	3	14	6	723	23 912	337	590	6 595	67 399	42 974	103 151	3 121
334	Computer & electronic product mfg .....	1	37	20	2 351	101 179	886	2 089	30 310	334 023	116 527	445 349	38 000
3344	Semiconductor & other electronic component mfg .....	—	14	6	g	D	D	D	D	D	D	D	D
33441	Semiconductor & other electronic component mfg .....	—	14	6	g	D	D	D	D	D	D	D	D
334413	Semiconductor & related device mfg ...	—	2	2	g	D	D	D	D	D	D	D	D

**Table 4. Industry Statistics for Places: 1997—Con.**

[Includes data for industry groups and industries with 500 employees or more. For information on geographic areas followed by \* and explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

NAICS code	Geographic area and industry	E <sup>1</sup>	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Total	With 20 employees or more	Number <sup>2</sup>	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
	<b>TUCSON, AZ—Con.</b>												
<b>31-33</b>	<b>Manufacturing—Con.</b>												
336	Transportation equipment mfg .....	-	8	2	i	D	D	D	D	D	D	D	D
3364	Aerospace product & parts mfg .....	-	2	2	i	D	D	D	D	D	D	D	D
33641	Aerospace product & parts mfg .....	-	2	2	i	D	D	D	D	D	D	D	D
336414	Guided missile & space vehicle mfg ...	-	1	1	i	D	D	D	D	D	D	D	D
339	Miscellaneous mfg .....	1	66	12	1 335	37 966	854	1 185	12 791	93 636	135 947	227 853	11 041
3391	Medical equipment & supplies mfg .....	1	37	7	661	22 157	395	572	7 209	62 895	115 911	178 588	8 352
33911	Medical equipment & supplies mfg .....	1	37	7	661	22 157	395	572	7 209	62 895	115 911	178 588	8 352
3399	Other miscellaneous mfg ...	-	29	5	674	15 809	459	613	5 582	30 741	20 036	49 265	2 689
	<b>YUMA, AZ</b>												
<b>31-33</b>	<b>Manufacturing ....</b>	-	<b>36</b>	<b>9</b>	<b>2 481</b>	<b>44 468</b>	<b>2 255</b>	<b>4 403</b>	<b>35 985</b>	<b>136 486</b>	<b>212 675</b>	<b>348 069</b>	<b>D</b>
336	Transportation equipment mfg .....	-	1	1	g	D	D	D	D	D	D	D	D
3363	Motor vehicle parts mfg ...	-	1	1	g	D	D	D	D	D	D	D	D
33632	Motor vehicle electrical & electronic equipment mfg .....	-	1	1	g	D	D	D	D	D	D	D	D
336322	Other motor vehicle electrical & electronic equipment mfg .....	-	1	1	g	D	D	D	D	D	D	D	D

<sup>1</sup>Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1—10 to 19 percent; 2—20 to 29 percent; 3—30 to 39 percent; 4—40 to 49 percent; 5—50 to 59 percent; 6—60 to 69 percent; 7—70 to 79 percent; 8—80 to 89 percent; 9—90 percent or more.

<sup>2</sup>Industries with 500 employees or more are shown. Some statistics are withheld to avoid disclosing data for individual companies. If employment is 500 or more, number of establishments is shown and employment-size range is indicated by one of the following symbols: c—100 to 249 employees; e—250 to 499 employees; f—500 to 999 employees; g—1,000 to 2,499 employees; h—2,500 to 4,999 employees; i—5,000 to 9,999 employees; j—10,000 to 24,999 employees; k—25,000 to 49,999 employees; l—50,000 to 99,999 employees; m—100,000 employees or more.

**Table 5. Detailed Statistics for the State: 1997**

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
<b>ARIZONA</b>		<b>ARIZONA—Con.</b>	
Companies <sup>1</sup> . . . . . number..	4 747	Quantity of electricity purchased for heat and power . . . . . 1,000 kWh..	6 738 924
All establishments . . . . . number..	4 917	Quantity of electricity generated less sold for heat and power . . . . . 1,000 kWh..	427 611
Establishments with 1 to 19 employees . . . . . number..	3 547	Total value of shipments . . . . . \$1,000..	43 030 348
Establishments with 20 to 99 employees . . . . . number..	1 066	Value of resales . . . . . \$1,000..	923 228
Establishments with 100 employees or more . . . . . number..	304	Value added . . . . . \$1,000..	26 898 948
All employees . . . . . number..	193 616	Total inventories, beginning of year . . . . . \$1,000..	5 996 885
Total compensation <sup>2</sup> . . . . . \$1,000..	8 449 282	Finished goods inventories, beginning of year . . . . . \$1,000..	1 141 383
Annual payroll . . . . . \$1,000..	6 753 601	Work-in-process inventories, beginning of year . . . . . \$1,000..	3 374 144
Total fringe benefits . . . . . \$1,000..	1 695 681	Materials and supplies inventories, beginning of year . . . . . \$1,000..	1 481 358
Production workers, average for year . . . . . number..	121 994	Total inventories, end of year . . . . . \$1,000..	5 968 719
Production workers on March 12 . . . . . number..	120 632	Finished goods inventories, end of year . . . . . \$1,000..	1 239 536
Production workers on May 12 . . . . . number..	121 619	Work-in-process inventories, end of year . . . . . \$1,000..	3 024 987
Production workers on August 12 . . . . . number..	122 630	Materials and supplies inventories, end of year . . . . . \$1,000..	1 704 196
Production workers on November 12 . . . . . number..	123 095	Gross book value of total assets at beginning of year . . . . . \$1,000..	15 549 979
Production-worker hours . . . . . 1,000..	247 489	Total capital expenditures (new and used) . . . . . \$1,000..	2 504 585
Production-worker wages . . . . . \$1,000..	3 000 055	Capital expenditures for buildings and other structures (new and used) . . . . . \$1,000..	324 479
Total cost of materials . . . . . \$1,000..	15 878 330	Capital expenditures for machinery and equipment (new and used) . . . . . \$1,000..	2 180 106
Cost of materials, parts, containers, etc., consumed . . . . . \$1,000..	14 137 436	Total retirements <sup>2</sup> . . . . . \$1,000..	589 517
Cost of resales . . . . . \$1,000..	738 795	Gross book value of total assets at end of year . . . . . \$1,000..	17 465 047
Cost of fuels . . . . . \$1,000..	144 402	Total depreciation during year <sup>2</sup> . . . . . \$1,000..	1 490 997
Cost of purchased electricity . . . . . \$1,000..	381 479	Total rental payments <sup>2</sup> . . . . . \$1,000..	332 286
Cost of contract work . . . . . \$1,000..	476 218	Buildings and other structures rental payments <sup>2</sup> . . . . . \$1,000..	166 244
		Machinery and equipment rental payments <sup>2</sup> . . . . . \$1,000..	166 042

<sup>1</sup>For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

<sup>2</sup>These items are collected in the ASM and estimated for the remaining establishments.

# Appendix A.

## Explanation of Terms

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### **BEGINNING- AND END-OF-YEAR INVENTORIES**

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

### **Inventory Data by Stage of Fabrication**

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

### **COST OF MATERIALS**

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

### **Duplication in Cost of Materials and Value of Shipment**

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual

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manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

### **DEPRECIATION CHARGES FOR FIXED ASSETS**

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

### **EMPLOYEES**

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

#### **Production Workers**

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

#### **All Other Employees**

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria,

medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

### **FRINGE BENEFITS**

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

### **GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)**

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

### **NUMBER OF ESTABLISHMENTS AND COMPANIES**

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location

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where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

### **PAYROLL**

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

### **PRODUCTION-WORKER HOURS**

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

### **QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER**

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the

Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

### **RENTAL PAYMENTS**

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

### **RETIREMENTS OF DEPRECIABLE ASSETS**

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

### **TOTAL CAPITAL EXPENDITURES (NEW AND USED)**

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and

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plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

### **VALUE ADDED**

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning- and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

### **VALUE OF SHIPMENTS**

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

### **Duplication in Cost of Materials and Value of Shipment**

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

# Appendix B.

## NAICS Codes, Titles, and Descriptions

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### SECTOR 31-33 MANUFACTURING

The Manufacturing sector comprises establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products. The assembling of component parts of manufactured products is considered manufacturing, except in cases where the activity is appropriately classified in Sector 23, Construction.

Establishments in the Manufacturing sector are often described as plants, factories, or mills and characteristically use power-driven machines and materials-handling equipment. However, establishments that transform materials or substances into new products by hand or in the worker's home and those engaged in selling to the general public products made on the same premises from which they are sold, such as bakeries, candy stores, and custom tailors, may also be included in this sector. Manufacturing establishments may process materials or may contract with other establishments to process their materials for them. Both types of establishments are included in manufacturing.

The materials, substances, or components transformed by manufacturing establishments are raw materials that are products of agriculture, forestry, fishing, mining, or quarrying as well as products of other manufacturing establishments. The materials used may be purchased directly from producers, obtained through customary trade channels, or secured without recourse to the market by transferring the product from one establishment to another, under the same ownership.

The new product of a manufacturing establishment may be finished in the sense that it is ready for utilization or consumption, or it may be semifinished to become an input for an establishment engaged in further manufacturing. For example, the product of the alumina refinery is the input used in the primary production of aluminum; primary aluminum is the input to an aluminum wire drawing plant; and aluminum wire is the input for a fabricated wire product manufacturing establishment.

The subsectors in the Manufacturing sector generally reflect distinct production processes related to material inputs, production equipment, and employee skills. In the machinery area, where assembling is a key activity, parts and accessories for manufactured products are classified in the industry of the finished manufactured item when they are made for separate sale. For example, a replacement refrigerator door would be classified with refrigerators and an attachment for a piece of metal working

machinery would be classified with metal working machinery. However, components, input from other manufacturing establishments, are classified based on the production function of the component manufacturer. For example, electronic components are classified in Subsector 334, Computer and Electronic Product Manufacturing and stampings are classified in Subsector 332, Fabricated Metal Product Manufacturing.

Manufacturing establishments often perform one or more activities that are classified outside the Manufacturing sector of NAICS. For instance, almost all manufacturing has some captive research and development or administrative operations, such as accounting, payroll, or management. These captive services are treated the same as captive manufacturing activities. When the services are provided by separate establishments, they are classified to the NAICS sector where such services are primary, not in manufacturing.

The boundaries of manufacturing and the other sectors of the classification system can be somewhat blurry. The establishments in the manufacturing sector are engaged in the transformation of materials into new products. Their output is a new product. However, the definition of what constitutes a new product can be somewhat subjective. As clarification, the following activities are considered manufacturing in NAICS: milk bottling and pasteurizing; water bottling and processing; fresh fish packaging (oyster shucking, fish filleting); apparel jobbing (assigning of materials to contract factories or shops for fabrication or other contract operations) as well as contracting on materials owned by others; printing and related activities; ready-mixed concrete production; leather converting; grinding of lenses to prescription; wood preserving; electroplating, plating, metal heat treating, and polishing for the trade; lapidary work for the trade; fabricating signs and advertising displays; rebuilding or remanufacturing machinery (i.e., automotive parts); ship repair and renovation; machine shops; and tire retreading.

Conversely, there are activities that are sometimes considered manufacturing, but which for NAICS are classified in another sector (i.e., not classified as manufacturing). They include:

1. Logging, classified in Sector 11, Agriculture, Forestry, Fishing and Hunting, is considered a harvesting operation;
2. The beneficiating of ores and other minerals, classified in Sector 21, Mining, is considered part of the activity of mining;



3. The construction of structures and fabricating operations performed at the site of construction by contractors, is classified in Sector 23, Construction;
4. Establishments engaged in breaking of bulk and redistribution in smaller lots, including packaging, repackaging, or bottling products, such as liquors or chemicals; the customized assembly of computers; sorting of scrap; mixing paints to customer order; and cutting metals to customer order, classified in Sector 42, Wholesale Trade or Sector 44-45, Retail Trade, produce a modified version of the same product, not a new product; and
5. Publishing and the combined activity of publishing and printing, classified in Sector 51, Information, perform the transformation of information into a product where as the value of the product to the consumer lies in the information content, not in the format in which it is distributed (i.e., the book or software diskette).

### **311 Food Manufacturing**

Industries in the Food Manufacturing subsector transform livestock and agricultural products into products for intermediate or final consumption. The industry groups are distinguished by the raw materials (generally of animal or vegetable origin) processed into food products.

The food products manufactured in these establishments are typically sold to wholesalers or retailers for distribution to consumers, but establishments primarily engaged in retailing bakery and candy products made on the premises not for immediate consumption are included.

Establishments primarily engaged in manufacturing beverages are classified in Subsector 312, Beverage and Tobacco Product Manufacturing.

#### **3111 Animal Food Manufacturing**

This NAICS industry group includes establishments classified in NAICS Industry 31111, Animal Food Manufacturing.

##### **31111 Animal Food Manufacturing**

This industry comprises establishments primarily engaged in manufacturing food and feed for animals from ingredients, such as grains, oilseed mill products, and meat products.

##### **311111 Dog and Cat Food Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing dog and cat food from ingredients, such as grains, oilseed mill products, and meat products.

The data published with NAICS code 311111 include the following SIC industry:

2047 Dog and cat food

#### **311119 Other Animal Food Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing animal food (except dog and cat) from ingredients, such as grains, oilseed mill products, and meat products.

The data published with NAICS code 311119 include the following SIC industry:

2048 Prepared feeds and feed ingredients for animals and fowls, except dogs and cats (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 311119 do not include establishments primarily engaged in the custom grinding of grain. The NAICS definitions will be fully implemented with the 2002 Economic Census.

#### **3112 Grain and Oilseed Milling**

This NAICS industry group includes establishments classified in the following NAICS Industries: 31121, Flour Milling and Malt Manufacturing; 31122, Starch and Vegetable Fats and Oils Manufacturing; and 31123, Breakfast Cereal Manufacturing.

##### **31121 Flour Milling and Malt Manufacturing**

This industry comprises establishments primarily engaged in one or more of the following: (1) milling flour or meal from grains or vegetables; (2) preparing flour mixes or doughs from flour milled in the same establishment; (3) milling, cleaning, and polishing rice; and (4) manufacturing malt from barley, rye, or other grains.

##### **311211 Flour Milling**

This U.S. industry comprises establishments primarily engaged in (1) milling flour or meal from grains (except rice) or vegetables and/or (2) milling flour and preparing flour mixes or doughs.

The data published with NAICS code 311211 include the following SIC industries:

2034 Dehydrated fruits, vegetables, and soup mixes (pt)

2041 Flour and other grain mill products

##### **311212 Rice Milling**

This U.S. industry comprises establishments primarily engaged in one of the following: (1) milling rice; (2) cleaning and polishing rice; or (3) milling, cleaning, and polishing rice. The establishments in this industry may package the rice they mill with other ingredients.

The data published with NAICS code 311212 include the following SIC industry:

2044 Rice milling

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This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 311212 do not include rice mills primarily engaged in packaging uncooked rice with other ingredients. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **311213 Malt Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing malt from barley, rye, or other grains.

The data published with NAICS code 311213 include the following SIC industry:

2083 Malt

### **31122 Starch and Vegetable Fats and Oils Manufacturing**

This industry comprises establishments primarily engaged in one or more of the following: (1) wet milling corn and vegetables; (2) crushing oilseeds and tree nuts; (3) refining and/or blending vegetable oils; (4) manufacturing shortening and margarine; and (5) blending purchased animal fats with vegetable fats.

#### **311221 Wet Corn Milling**

This U.S. industry comprises establishments primarily engaged in wet milling corn and other vegetables (except to make ethyl alcohol). Examples of products made in these establishments are corn sweeteners, such as glucose, dextrose, and fructose; corn oil; and starches (except laundry).

The data published with NAICS code 311221 include the following SIC industry:

2046 Wet corn milling

#### **311222 Soybean Processing**

This U.S. industry comprises establishments engaged in crushing soybeans. Examples of products produced in these establishments are soybean oil, soybean cake and meal, and soybean protein isolates and concentrates.

The data published with NAICS code 311222 include the following SIC industry:

2075 Soybean oil mills (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 311222 do not include establishments primarily engaged in the processing of

soybean oil from soybeans crushed in the same establishment. The NAICS definitions will be fully implemented with the 2002 Economic Census.

#### **311223 Other Oilseed Processing**

This U.S. industry comprises establishments engaged in crushing oilseeds (except soybeans) and tree nuts, such as cottonseeds, linseeds, peanuts, and sunflower seeds.

The data published with NAICS code 311223 include the following SIC industries:

2074 Cottonseed oil mills (pt)

2076 Vegetable oil mills, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 311223 do not include establishments primarily engaged in the processing of vegetable oils, except soybean oil, from oilseeds crushed in the same establishment. The NAICS definitions will be fully implemented with the 2002 Economic Census.

#### **311225 Fats and Oils Refining and Blending**

This U.S. industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing shortening and margarine from purchased fats and oils; (2) refining and/or blending vegetable, oilseed, and tree nut oils from purchased oils; and (3) blending purchased animal fats with purchased vegetable fats.

The data published with NAICS code 311225 include the following SIC industries:

2074 Cottonseed oil mills (pt)

2075 Soybean oil mills (pt)

2076 Vegetable oil mills, n.e.c. (pt)

2077 Animal and marine fats and oil (pt)

2079 Shortening and cooking oils

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 311225 do not include establishments primarily engaged in refining and/or blending corn oil from purchased oil. The data include establishments primarily engaged in the manufacture of vegetable oil foots. The NAICS definitions will be fully implemented with the 2002 Economic Census.

#### **31123 Breakfast Cereal Manufacturing**

This industry comprises establishments primarily engaged in manufacturing breakfast cereal foods.

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### **311230 Breakfast Cereal Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing breakfast cereal foods.

The data published with NAICS code 311230 include the following SIC industry:

2043 Cereal breakfast foods (pt)

### **3113 Sugar and Confectionery Product Manufacturing**

This industry group comprises (1) establishments that process agricultural inputs, such as sugarcane, beet, and cacao, to give rise to a new product (sugar or chocolate) and (2) those that begin with sugar and chocolate and process these further.

#### **31131 Sugar Manufacturing**

This industry comprises establishments primarily engaged in manufacturing raw sugar, liquid sugar, and refined sugar from sugarcane, raw cane sugar and sugarbeets.

##### **311311 Sugarcane Mills**

This U.S. industry comprises establishments primarily engaged in processing sugarcane.

The data published with NAICS code 311312 include the following SIC industry:

2061 Raw cane sugar

##### **311312 Cane Sugar Refining**

This U.S. industry comprises establishments primarily engaged in refining cane sugar from raw cane sugar.

The data published with NAICS code 311312 include the following SIC industry:

2062 Cane sugar refining

##### **311313 Beet Sugar Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing refined beet sugar from sugarbeets

The data published with NAICS code 311313 include the following SIC industry:

2063 Beet sugar

### **31132 Chocolate and Confectionery Manufacturing From Cacao Beans**

This industry comprises establishments primarily engaged in shelling, roasting, and grinding cacao beans and making chocolate cacao products and chocolate confectioneries.

### **311320 Chocolate and Confectionery Manufacturing From Cacao Beans**

This U.S. industry comprises establishments primarily engaged in shelling, roasting, and grinding cacao beans and making chocolate cacao products and chocolate confectioneries.

The data published with NAICS code 311320 include the following SIC industries:

2066 Chocolate and cocoa products

#### **31133 Confectionery Manufacturing From Purchased Chocolate**

This industry comprises establishments primarily engaged in manufacturing chocolate confectioneries from chocolate produced elsewhere. Included in this industry are establishments primarily engaged in retailing chocolate confectionery products not for immediate consumption made on the premises from chocolate made elsewhere.

##### **311330 Confectionery Manufacturing From Purchased Chocolate**

This U.S. industry comprises establishments primarily engaged in manufacturing chocolate confectioneries from chocolate produced elsewhere. Included in this industry are establishments primarily engaged in retailing chocolate confectionery products not for immediate consumption made on the premises from chocolate made elsewhere.

The data published with NAICS code 311330 include the following SIC industries:

2064 Candy and other confectionery products and chewing gum (pt)

5441 Candy, nut, and confectionery stores (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 311330 do not include establishments primarily engaged in the manufacture of chocolate products made from purchased chocolate. The NAICS definitions will be fully implemented with the 2002 Economic Census.

##### **3113301 Chocolate and Chocolate-type Confectionery Retail – Manufacturer**

Establishments primarily engaged in the manufacture of consumer-type chocolate and chocolate-type confectionery products not for immediate consumption made on the premises from chocolate produced elsewhere.

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### **3113302 Chocolate and Chocolate-type Confectionery – Manufacturer**

Establishments primarily engaged in the manufacture of consumer-type chocolate and chocolate-type confectionery products from chocolate produced elsewhere.

### **31134 Nonchocolate Confectionery Manufacturing**

This industry comprises establishments primarily engaged in manufacturing nonchocolate confectioneries. Included in this industry are establishments primary engaged in retailing nonchocolate confectionery products not for immediate consumption made on the premises.

### **311340 Nonchocolate Confectionery Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing nonchocolate confectioneries. Included in this industry are establishments primary engaged in retailing nonchocolate confectionery products not for immediate consumption made on the premises.

The data published with NAICS code 311340 include the following SIC industries:

2064 Candy and other confectionery products and chewing gum (pt)

2099 Food preparations, n.e.c. (pt)

5441 Candy, nut, and confectionery stores (pt)

### **3113401 Nonchocolate-Type Confectionery Products Retail – Manufacturer**

Establishments primarily engaged in the manufacture of consumer-type nonchocolate confectionery products, excluding cough drops, medicated candy, roasted peanuts, unsweetened popcorn and fountain syrup, not for immediate consumption made on the premises.

### **3113402 Nonchocolate-Type Confectionery Products – Manufacturer**

Establishments primarily engaged in the manufacture of consumer-type nonchocolate confectionery products, excluding cough drops, medicated candy, roasted peanuts, unsweetened popcorn and fountain syrup.

### **3114 Fruit and Vegetable Preserving and Specialty Food Manufacturing**

This industry group includes (1) establishments that freeze food and (2) those that use preservation processes, such as pickling, canning, and dehydrating. Both types begin their production process with inputs of vegetable or animal origin.

### **31141 Frozen Food Manufacturing**

This industry comprises establishments primarily engaged in manufacturing frozen fruit, frozen juices, frozen vegetables, and frozen specialty foods (except seafood), such as frozen dinners, entrees, and side dishes; frozen pizza; frozen whipped toppings; and frozen waffles, pancakes, and french toast.

### **311411 Frozen Fruit, Juice, and Vegetable Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing frozen fruits; frozen vegetables; and frozen fruit juices, –ades, drinks, cocktail mixes and concentrates.

The data published with NAICS code 311411 include the following SIC industry:

2037 Frozen fruits and vegetables

### **311412 Frozen Specialty Food Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing frozen specialty foods (except seafood), such as frozen dinners, entrees, and side dishes; frozen pizza; frozen whipped topping; and frozen waffles, pancakes, and french toast.

The data published with NAICS code 311412 include the following SIC industry:

2038 Frozen specialties, n.e.c.

### **31142 Fruit and Vegetable Canning, Pickling, and Drying**

This industry comprises establishments primarily engaged in manufacturing canned, pickled, and dried fruits, vegetables, and specialty foods. Establishments in this industry may package the dried or dehydrated ingredients they make with other purchased ingredients. Examples of products made by these establishments are canned juices; canned baby foods; canned soups (except seafood); canned dry beans; canned tomato-based sauces, such as catsup, salsa, chili, spaghetti, barbeque, and tomato paste, pickles, relishes, jams and jellies, dried soup mixes and bullions, and sauerkraut.

### **311421 Fruit and Vegetable Canning**

This U.S. industry comprises establishments primarily engaged in manufacturing canned, pickled, and brined fruits and vegetables. Examples of products made in these establishments are canned juices; canned jams and jellies; canned tomato-based sauces, such as catsup, salsa, chili, spaghetti, barbeque, and tomato paste; pickles, relishes, and sauerkraut.

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The data published with NAICS code 311421 include the following SIC industries:

2033 Canned fruits and vegetables

2035 Pickles, sauces, and salad dressings (pt)

### **311422 Specialty Canning**

This U.S. industry comprises establishments primarily engaged in manufacturing canned specialty foods. Examples of products made in these establishments are canned baby food, canned baked beans, canned soups (except seafood), canned spaghetti, and other canned nationality foods.

The data published with NAICS code 311422 include the following SIC industry:

2032 Canned specialties (pt)

### **311423 Dried and Dehydrated Food Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) drying (including freeze-dried) and/or dehydrating fruits, vegetables, and soup mixes and bouillon and/or (2) drying and/or dehydrating ingredients and packaging them with other purchased ingredients, such as rice and dry pasta.

The data published with NAICS code 311423 include the following SIC industries:

2034 Dehydrated fruits, vegetables, and soups (pt)

2099 Food preparations, n.e.c. (pt)

### **3115 Dairy Product Manufacturing**

This industry group comprises establishments that manufacture dairy products from raw milk, processed milk, and dairy substitutes.

31151 Dairy Product (Except Frozen) Manufacturing

This industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing dairy products (except frozen) from raw milk and/or processed milk products; (2) manufacturing dairy substitutes (except frozen) from soybeans and other nondairy substances; and (3) manufacturing dry, condensed, concentrated, and evaporated dairy and dairy substitute products.

#### **311511 Fluid Milk Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) manufacturing processed milk products, such as pasteurized milk or cream and sour cream and/or (2) manufacturing fluid milk dairy substitutes from soybeans and other nondairy substances.

The data published with NAICS code 311511 include the following SIC industry:

2026 Fluid milk

#### **311512 Creamery Butter Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing creamery butter from milk and/or processed milk products.

The data published with NAICS code 311512 include the following SIC industry:

2021 Creamery butter

#### **311513 Cheese Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) manufacturing cheese products (except cottage cheese) from raw milk and/or processed milk products and/or (2) manufacturing cheese substitutes from soybean and other nondairy substances.

The data published with NAICS code 311513 include the following SIC industry:

2022 Cheese, natural and processed

#### **311514 Dry, Condensed, and Evaporated Dairy Product Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing dry, condensed, and evaporated milk and dairy substitute products.

The data published with NAICS code 311514 include the following SIC industry:

2023 Dry, condensed and evaporated milk

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 311514 do not include establishments primarily engaged in the manufacture of fluid milk processed with ultra-high temperature. The NAICS definitions will be fully implemented with the 2002 Economic Census.

#### **31152 Ice Cream and Frozen Dessert Manufacturing**

This industry comprises establishments primarily engaged in manufacturing ice cream, frozen yogurts, frozen ices, sherbets, frozen tofu, and other frozen desserts (except bakery products).

#### **311520 Ice Cream and Frozen Dessert Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing ice cream, frozen yogurts, frozen ices, sherbets, frozen tofu, and other frozen desserts (except bakery products).

The data published with NAICS code 311520 include the following SIC industry:

2024 Ice cream and frozen desserts

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## **3116 Meat Product Manufacturing**

This NAICS industry group includes establishments classified in NAICS Industry 31161, Animal Slaughtering and Processing.

### **31161 Animal Slaughtering and Processing**

This industry comprises establishments primarily engaged in one or more of the following: (1) slaughtering animals; (2) preparing processed meats and meat byproducts; and (3) rendering and/or refining animal fat, bones, and meat scraps. This industry includes establishments primarily engaged in assembly cutting and packing of meats (i.e., boxed meats) from purchased carcasses.

#### **311611 Animal (Except Poultry) Slaughtering**

This U.S. industry comprises establishments primary engaged in slaughtering animals (except poultry and small game). Establishments that slaughter and prepare meats are included in this industry.

The data published with NAICS code 311611 include the following SIC industries:

2011 Meat packing plants

2048 Prepared feeds, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 311611 do not include establishments primarily engaged in custom slaughtering. The NAICS definitions will be fully implemented with the 2002 Economic Census.

#### **311612 Meat Processed From Carcasses**

This U.S. industry comprises establishments primarily engaged in processing or preserving meat and meat byproducts (except poultry and small game) from purchased meats. This industry includes establishments primarily engaged in assembly cutting and packing of meats (i.e., boxed meats) from purchased meats.

The data published with NAICS code 311612 include the following SIC industries:

2013 Sausages and other prepared meats

5147 Meat and meat products (pt)

#### **311613 Rendering and Meat Byproduct Processing**

This U.S. industry comprises establishments primarily engaged in rendering animal fat, bones, and meat scraps.

The data published with NAICS code 311613 include the following SIC industry:

2077 Animal and marine fats and oil (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 311613 do not include establishments primarily engaged in manufacturing lard from purchased materials. The NAICS definitions will be fully implemented with the 2002 Economic Census.

#### **311615 Poultry Processing**

This U.S. industry comprises establishments primarily engaged in (1) slaughtering poultry and small game and/or (2) preparing processed poultry and small game meat and meat byproducts.

The data published with NAICS code 311615 include the following SIC industry:

2015 Poultry and egg processing (pt)

#### **3117 Seafood Product Preparation and Packaging**

This NAICS industry group includes establishments classified in NAICS Industry 31171, Seafood Product Preparation and Packaging.

#### **31171 Seafood Product Preparation and Packaging**

This industry comprises establishments primarily engaged in one or more of the following: (1) canning seafood (including soup); (2) smoking, salting, and drying seafoods; (3) eviscerating fresh fish by removing heads, fins, scales, bones, and entrails; (4) shucking and packing fresh shellfish; (5) processing marine fats and oils; and (6) freezing seafood. Establishments known as “floating factory ships” that are engaged in the gathering and processing of seafood into canned seafood products are included in this industry.

##### **311711 Seafood Canning**

This U.S. industry comprises establishments primarily engaged in (1) canning seafood (including soup) and marine fats and oils and/or (2) smoking, salting, and drying seafoods. Establishments known as “floating factory ships” that are engaged in the gathering and processing of seafood into canned seafood products are included in this industry.

The data published with NAICS code 311711 include the following SIC industries:

2077 Animal and marine fats and oil (pt)

2091 Canned and cured seafood

##### **311712 Fresh and Frozen Seafood Processing**

This U.S. industry comprises establishments primarily engaged in one or more of the following: (1) eviscerating fresh fish by removing heads, fins, scales, bones, and

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entrails; (2) shucking and packing fresh shellfish; (3) manufacturing frozen seafood; and (4) processing fresh and frozen marine fats and oils.

The data published with NAICS code 311712 include the following SIC industries:

2077 Animal and marine fats and oil (pt)

2092 Prepared fresh or frozen fish and seafood

### **3118 Bakeries and Tortilla Manufacturing**

This NAICS industry group includes establishments classified in the following NAICS Industries: 31181, Bread and Bakery Product Manufacturing; 31182, Cookie, Cracker, and Pasta Manufacturing; and 31183, Tortilla Manufacturing.

#### **31181 Bread and Bakery Product Manufacturing**

This industry comprises establishments primarily engaged in manufacturing fresh and frozen bread and other bakery products.

##### **311811 Retail Bakeries**

This U.S. industry comprises establishments primarily engaged in retailing bread and other bakery products not for immediate consumption made on the premises from flour, not from prepared dough.

The data published with NAICS code 311811 include the following SIC industry:

5461 Retail bakeries (pt)

##### **311812 Commercial Bakeries**

This U.S. industry comprises establishments primarily engaged in manufacturing fresh and frozen bread and bread-type rolls and other fresh bakery (except cookies and crackers) products.

The data published with NAICS code 311812 include the following SIC industries:

2051 Bread, cake, and related products

2052 Cookies and crackers (pt)

##### **311813 Frozen Cakes, Pies, and Other Pastries Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing frozen bakery products (except bread), such as cakes, pies, and doughnuts.

The data published with NAICS code 311813 include the following SIC industry:

2053 Frozen bakery products, except bread

##### **31182 Cookie, Cracker, and Pasta Manufacturing**

This industry comprises establishments primarily engaged in one of the following: (1) manufacturing cookies and crackers; (2) preparing flour and dough mixes and

dough from flour ground elsewhere; and (3) manufacturing dry pasta. The establishments in this industry may package the dry pasta they manufacture with other ingredients.

##### **311821 Cookie and Cracker Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing cookies, crackers, and other products, such as ice cream cones.

The data published with NAICS code 311821 include the following SIC industry:

2052 Cookies and crackers (pt)

##### **311822 Flour Mixes and Dough Manufacturing From Purchased Flour**

This U.S. industry comprises establishments primarily engaged in manufacturing prepared flour mixes or dough mixes from flour ground elsewhere.

The data published with NAICS code 311822 include the following SIC industries:

2045 Blended and prepared flour

##### **311823 Dry Pasta Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing dry pasta. The establishments in this industry may package the dry pasta they manufacture with other ingredients.

The data published with NAICS code 311823 include the following SIC industry:

2098 Macaroni and spaghetti

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 311823 do not include dry pasta plants primarily engaged in packaging dry pasta with other ingredients. The NAICS definitions will be fully implemented with the 2002 Economic Census.

##### **31183 Tortilla Manufacturing**

This industry comprises establishments primarily engaged in manufacturing tortillas.

##### **311830 Tortilla Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing tortillas.

The data published with NAICS code 311830 include the following SIC industry:

2099 Food preparations, n.e.c. (pt)

### **3119 Other Food Manufacturing**

This industry group comprises establishments primarily engaged in manufacturing food (except animal food; grain and oilseed milling; sugar and confectionery products; preserved fruit, vegetable, and specialty foods; dairy products; meat products; seafood products; and bakeries and tortillas). The industry group includes industries with different productive processes, such as snack food manufacturing; coffee and tea manufacturing; concentrate, syrup, condiment, and spice manufacturing; and, in general, an entire range of other miscellaneous food product manufacturing.

#### **31191 Snack Food Manufacturing**

This industry comprises establishments primarily engaged in one or more of the following: (1) salting, roasting, drying, cooking, or canning nuts; (2) processing grains or seeds into snacks; (3) manufacturing peanut butter; and (4) manufacturing potato chips, corn chips, popped popcorn, pretzels (except soft), pork rinds, and similar snacks.

##### **311911 Roasted Nuts and Peanut Butter Manufacturing**

This U.S. industry comprises establishments primarily engaged in one or more of the following: (1) salting, roasting, drying, cooking, or canning nuts; (2) processing grains or seeds into snacks; and (3) manufacturing peanut butter.

The data published with NAICS code 311911 include the following SIC industries:

2068 Salted and roasted nuts and seeds

2099 Food preparations, n.e.c. (pt)

##### **311919 Other Snack Food Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing snack foods (except roasted nuts and peanut butter).

The data published with NAICS code 311919 include the following SIC industries:

2052 Cookies and crackers (pt)

2096 Potato chips and similar snacks

#### **31192 Coffee and Tea Manufacturing**

This industry comprises establishments primarily engaged in one or more of the following: (1) roasting coffee; (2) manufacturing coffee and tea concentrates (including instant and freeze-dried); (3) blending tea; (4) manufacturing herbal tea; and (5) manufacturing coffee extracts, flavorings, and syrups.

#### **311920 Coffee and Tea Manufacturing**

This U.S. industry comprises establishments primarily engaged in one or more of the following: (1) roasting coffee; (2) manufacturing coffee and tea concentrates (including instant and freeze-dried); (3) blending tea; (4) manufacturing herbal tea; and (5) manufacturing coffee extracts, flavorings, and syrups.

The data published with NAICS code 311920 include the following SIC industries:

2043 Cereal breakfast foods (pt)

2095 Roasted coffee (pt)

2099 Food preparations, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 311920 do not include establishments primarily engaged in the manufacture of coffee flavorings and syrups. The NAICS definitions will be fully implemented with the 2002 Economic Census.

##### **31193 Flavoring Syrup and Concentrate Manufacturing**

This industry comprises establishments primarily engaged in manufacturing flavoring syrup drink concentrates and related products for soda fountain use or for the manufacture of soft drinks.

##### **311930 Flavoring Syrup and Concentrate Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing flavoring syrup drink concentrates and related products for soda fountain use or for the manufacture of soft drinks.

The data published with NAICS code 311930 include the following SIC industry:

2087 Flavoring extracts and syrups, n.e.c. (pt)

##### **31194 Seasoning and Dressing Manufacturing**

This industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing dressings and sauces, such as mayonnaise, salad dressing, vinegar, mustard, horseradish, soy sauce, tarter sauce, Worcestershire sauce, and other prepared sauces (except tomato-based and gravies); (2) manufacturing spices, table salt, seasoning, and flavoring extracts (except coffee and meat), and natural food colorings; and (3) manufacturing dry mix food preparations, such as salad dressing mixes, gravy and sauce mixes, frosting mixes, and other dry mix preparations.



### **311941 Mayonnaise, Dressing, and Other Prepared Sauce Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing mayonnaise, salad dressing, vinegar, mustard, horseradish, soy sauce, tarter sauce, Worcestershire sauce, and other prepared sauces (except tomato-based and gravy).

The data published with NAICS code 311941 include the following SIC industries:

2035 Pickles, sauces, and salad dressings (pt)

2099 Food preparations, n.e.c.(pt)

### **311942 Spice and Extract Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) manufacturing spices, table salt, seasonings, flavoring extracts (except coffee and meat), and natural food colorings and/or (2) manufacturing dry mix food preparations, such as salad dressing mixes, gravy and sauce mixes, frosting mixes, and other dry mix preparations.

The data published with NAICS code 311942 include the following SIC industries:

2087 Flavoring extracts and syrups, n.e.c. (pt)

2095 Roasted coffee (pt)

2099 Food preparations, n.e.c. (pt)

2899 Chemical preparations, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 311942 include establishments primarily engaged in the manufacture of coffee extracts but do not include establishments primarily engaged in the manufacture of malt extract. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **31199 All Other Food Manufacturing**

This industry comprises establishments primarily engaged in manufacturing food (except animal food; grain and oilseed milling; sugar and confectionery products; preserved fruits, vegetables, and specialties; dairy products; meat products; seafood products; bakeries and tortillas; snack foods; coffee and tea; flavoring syrups and concentrates; seasonings; and dressings). Included in this industry are establishments primarily engaged in mixing purchased dried and/or dehydrated ingredients including those mixing purchased dried and/or dehydrated ingredients for soup mixes and bouillon.

### **311991 Perishable Prepared Food Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing perishable prepared foods, such as salads, sandwiches, prepared meals, fresh pizza, fresh pasta, and peeled or cut vegetables.

The data published with NAICS code 311991 include the following SIC industry:

2099 Food preparations, n.e.c. (pt)

### **311999 All Other Miscellaneous Food Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing food (except animal food; grain and oilseed milling; sugar and confectionery products; preserved fruits, vegetables, and specialties; dairy products; meat products; seafood products; bakeries and tortillas; snack foods; coffee and tea; flavoring syrups and concentrates; seasonings and dressings; and perishable prepared food). Included in this industry are establishments primarily engaged in mixing purchased dried and/or dehydrated ingredients including those mixing purchased dried and/or dehydrated ingredients for soup mixes and bouillon.

The data published with NAICS code 311999 include the following SIC industries:

2015 Poultry slaughtering and processing (pt)

2032 Canned specialties (pt)

2087 Flavoring extracts and syrups, n.e.c. (pt)

2099 Food preparations, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 311999 do not include establishments primarily engaged in the manufacture of soup mixes from purchased dehydrated ingredients. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **312 Beverage and Tobacco Product Manufacturing**

Industries in the Beverage and Tobacco Product Manufacturing subsector manufacture beverages and tobacco products. The industry group, Beverage Manufacturing, includes three types of establishments: (1) those that manufacture nonalcoholic beverages; (2) those that manufacture alcoholic beverages through the fermentation process; and (3) those that produce distilled alcoholic beverages. Ice manufacturing, while not a beverage, is included with nonalcoholic beverage manufacturing because it uses the same production process as water purification.

In the case of activities related to the manufacture of beverages, the structure follows the defined productive processes. Brandy, a distilled beverage, was not placed

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under distillery product manufacturing, but rather under the NAICS class for winery product manufacturing since the productive process used in the manufacturing of alcoholic grape-based beverages produces both wines (fermented beverage) and brandies (distilled beverage).

The industry group, Tobacco Manufacturing, includes two types of establishments: (1) those engaged in redrying and stemming tobacco and (2) those that manufacture tobacco products, such as cigarettes and cigars.

### **3121 Beverage Manufacturing**

This NAICS industry group includes establishments classified in the following NAICS Industries: 31211, Soft Drink and Ice Manufacturing; 31212, Breweries; 31213, Wineries; and 31214, Distilleries.

#### **31211 Soft Drink and Ice Manufacturing**

This industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing soft drinks; (2) manufacturing ice; and (3) purifying and bottling water.

##### **312111 Soft Drink Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing soft drinks and artificially carbonated waters.

The data published with NAICS code 312111 include the following SIC industry:

2086 Bottled and canned soft drinks (pt)

##### **312112 Bottled Water Manufacturing**

This U.S. industry comprises establishments primarily engaged in purifying and bottling water (including naturally carbonated).

The data published with NAICS code 312112 include the following SIC industry:

2086 Bottled and canned soft drinks (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 312112 do not include establishments primarily engaged in the bottling of mineral or spring water. The NAICS definitions will be fully implemented with the 2002 Economic Census.

##### **312113 Ice Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing ice.

The data published with NAICS code 312113 include the following SIC industry:

2097 Manufactured ice

### **31212 Breweries**

This industry comprises establishments primarily engaged in brewing beer, ale, malt liquors, and nonalcoholic beer.

#### **312120 Breweries**

This U.S. industry comprises establishments primarily engaged in brewing beer, ale, malt liquors, and nonalcoholic beer.

The data published with NAICS code 312120 include the following SIC industry:

2082 Malt beverages

#### **31213 Wineries**

This industry comprises establishments primarily engaged in one or more of the following: (1) growing grapes and manufacturing wine and brandies; (2) manufacturing wine and brandies from grapes and other fruits grown elsewhere; and (3) blending wines and brandies.

##### **312130 Wineries**

This U.S. industry comprises establishments primarily engaged in one or more of the following: (1) growing grapes and manufacturing wine and brandies; (2) manufacturing wine and brandies from grapes and other fruits grown elsewhere; and (3) blending wines and brandies.

The data published with NAICS code 312130 include the following SIC industry:

2084 Wines, brandy, and brandy spirits

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 312130 do not include establishments primarily engaged in the manufacture of applejack. The NAICS definitions will be fully implemented with the 2002 Economic Census.

#### **31214 Distilleries**

This industry comprises establishments primarily engaged in one or more of the following: (1) distilling potable liquors (except brandies); (2) distilling and blending liquors; and (3) blending and mixing liquors and other ingredients.

##### **312140 Distilleries**

This U.S. industry comprises establishments primarily engaged in one or more of the following: (1) distilling potable liquors (except brandies); (2) distilling and blending liquors; and (3) blending and mixing liquors and other ingredients.

The data published with NAICS code 312140 include the following SIC industry:

2085 Distilled liquor, except brandy

## **3122 Tobacco Manufacturing**

This NAICS industry group includes establishments classified in the following NAICS Industries: 31221, Tobacco Stemming and Redrying; and 31222, Tobacco Product Manufacturing.

### **31221 Tobacco Stemming and Redrying**

This industry comprises establishments primarily engaged in the stemming and redrying of tobacco.

### **312210 Tobacco Stemming and Redrying**

This U.S. industry comprises establishments primarily engaged in the stemming and redrying of tobacco.

The data published with NAICS code 312210 include the following SIC industry:

2141 Tobacco stemming and redrying (pt)

### **31222 Tobacco Product Manufacturing**

This industry comprises establishments primarily engaged in manufacturing cigarettes, cigars, smoking and chewing tobacco, and reconstituted tobacco.

### **312221 Cigarette Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing cigarettes.

The data published with NAICS code 312221 include the following SIC industries:

2111 Cigarettes

### **312229 Other Tobacco Product Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing tobacco products (except cigarettes).

The data published with NAICS code 312229 include the following SIC industries:

2121 Cigars

2131 Chewing and smoking tobacco

2141 Tobacco stemming and redrying (pt)

## **313 Textile Mills**

Industries in the Textile Mills subsector group establishments that transform a basic fiber (natural or synthetic) into a product, such as yarn or fabric, that is further manufactured into usable items, such as apparel, sheets and towels, and textile bags for individual or industrial consumption. The further manufacturing may be performed in the same establishment and classified in this subsector, or it may be performed at a separate establishment and be classified elsewhere in manufacturing.

The main processes in this subsector include preparation and spinning of fiber, knitting or weaving of fabric, and the finishing of the textile. The NAICS structure follows and captures this process flow. Major industries in this flow, such as preparation of fibers, weaving of fabric, knitting of fabric, and fiber and fabric finishing, are uniquely identified. Texturizing, throwing, twisting, and winding of yarn contains aspects of both fiber preparation and fiber finishing and is classified with preparation of fibers rather than with finishing of fibers.

NAICS separates the manufacturing of primary textiles and the manufacturing of textile products (except apparel) when the textile product is produced from purchased primary textiles, such as fabric. The manufacturing of textile products (except apparel) from purchased fabric is classified in Subsector 314, Textile Product Mills, and apparel from purchased fabric is classified in Subsector 315, Apparel Manufacturing.

Excluded from this subsector are establishments that weave or knit fabric and make garments. These establishments are included in Subsector 315, Apparel Manufacturing.

## **3131 Fiber, Yarn, and Thread Mills**

This NAICS industry group includes establishments classified in NAICS Industry 31311, Fiber, Yarn, and Thread Mills.

### **31311 Fiber, Yarn, and Thread Mills**

This industry comprises establishments primarily engaged in one or more of the following: (1) spinning yarn; (2) manufacturing thread of any fiber; (3) texturizing, throwing, twisting, and winding purchased yarn or manmade fiber filaments; and (4) producing hemp yarn and further processing into rope or bags.

### **313111 Yarn Spinning Mills**

This U.S. industry comprises establishments primarily engaged in spinning yarn from any fiber and/or producing hemp yarn and further processing into rope or bags.

The data published with NAICS code 313111 include the following SIC industries:

2281 Yarn spinning mills

2299 Textile goods, n.e.c. (pt)

### **313112 Yarn Texturizing, Throwing, and Twisting Mills**

This U.S. industry comprises establishments primarily engaged in texturizing, throwing, twisting, spooling, or winding purchased yarns or manmade fiber filaments.

The data published with NAICS code 313112 include the following SIC industry:

2282 Yarn throwing and winding mills (pt)

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### **3131121 Yarn Texturing, Throwing, and Twisting Mills – Manufacturer**

Establishments primarily engaged in texturing, throwing, twisting, spooling, or winding purchased yarns or manmade filaments.

### **3131122 Yarn Texturing, Throwing, and Twisting Mills – Commission Finisher**

Establishments primarily engaged in throwing, twisting, spooling, or winding yarns or manmade filaments on a commission basis.

### **313113 Thread Mills**

This U.S. industry comprises establishments primarily engaged in manufacturing thread (e.g., sewing, hand-knitting, crochet) of all fibers.

The data published with NAICS code 313113 include the following SIC industries:

2284 Thread mills (pt)

2299 Textile goods, n.e.c. (pt)

### **3132 Fabric Mills**

This NAICS industry group includes establishments classified in the following NAICS Industries: 31321, Broadwoven Fabric Mills; 31322, Narrow Fabric Mills and Schiffli Machine Embroidery; 31323, Nonwoven Fabric Mills; and 31324, Knit Fabric Mills.

### **31321 Broadwoven Fabric Mills**

This industry comprises establishments primarily engaged in weaving broadwoven fabrics and felts (except tire fabrics and rugs). Establishments in this industry may weave only, weave and finish, or weave, finish, and further fabricate fabric products.

### **313210 Broadwoven Fabric Mills**

This U.S. industry comprises establishments primarily engaged in weaving broadwoven fabrics and felts (except tire fabrics and rugs). Establishments in this industry may weave only, weave and finish, or weave, finish, and further fabricate fabric products.

The data published with NAICS code 313210 include the following SIC industries:

2211 Weaving mills, cotton

2221 Weaving mills, synthetics

2231 Weaving and finishing mills, wool (pt)

2299 Textile goods, n.e.c. (pt)

### **31322 Narrow Fabric Mills and Schiffli Machine Embroidery**

This industry comprises establishments primarily engaged in one or more of the following: (1) weaving or braiding narrow fabrics; (2) manufacturing Schiffli machine embroideries; and (3) making fabric-covered elastic yarn and thread.

### **313221 Narrow Fabric Mills**

This U.S. industry comprises establishments primarily engaged in (1) weaving or braiding narrow fabrics in their final form or initially made in wider widths that are specially constructed for narrower widths and/or (2) making fabric-covered elastic yarn and thread. Establishments in this industry may weave only; weave and finish; or weave, finish, and further fabricate fabric products

The data published with NAICS code 313221 include the following SIC industries:

2241 Narrow fabric mills

2299 Textile goods, n.e.c. (pt)

### **313222 Schiffli Machine Embroidery**

This U.S. industry comprises establishments primarily engaged in manufacturing Schiffli machine embroideries.

The data published with NAICS code 313222 include the following SIC industry:

2397 Schiffli machine embroideries

### **31323 Nonwoven Fabric Mills**

This industry comprises establishments primarily engaged in manufacturing nonwoven fabrics and felts. Processes used include bonding and/or interlocking fibers by mechanical, chemical, thermal, or solvent means, or by combinations thereof.

### **313230 Nonwoven Fabric Mills**

This U.S. industry comprises establishments primarily engaged in manufacturing nonwoven fabrics and felts. Processes used include bonding and/or interlocking fibers by mechanical, chemical, thermal, or solvent means, or by combinations thereof.

The data published with NAICS code 313230 include the following SIC industries:

2297 Nonwoven fabrics

2299 Textile goods, n.e.c. (pt)

### **31324 Knit Fabric Mills**

This industry comprises establishments primarily engaged in one of the following: (1) knitting weft (i.e., circular) and warp (i.e., flat) fabric; (2) knitting and finishing

weft and warp fabric; (3) manufacturing lace; or (4) manufacturing, dyeing, and finishing lace and lace goods. Establishments in this industry may knit only; knit and finish; or knit, finish, and further fabricate fabric products (except apparel).

### **313241 Weft Knit Fabric Mills**

This U.S. industry comprises establishments primarily engaged in knitting weft (i.e., circular) fabric or knitting and finishing weft fabric. Establishments in this industry may knit only; knit and finish; or knit, finish, and further fabricate fabric products (except apparel).

The data published with NAICS code 313241 include the following SIC industry:

2257 Circular knit fabric mills (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 313241 do not include establishments primarily engaged in the manufacture of articles of weft knit fabric. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **3132411 Weft Knit Fabric Mills – Manufacturer**

Establishments primarily engaged in knitting weft (i.e., circular) fabric; knitting and finishing weft fabric; or knitting, finishing, and further fabricating weft fabric products (except apparel).

### **3132412 Weft Knit Fabric Mills – Jobber**

Establishments engaged as weft knit fabric jobbers, who perform entrepreneurial functions of a manufacturer, including buying raw materials, designing and preparing samples, arranging for fabric to be made from their materials, and marketing finished fabric or fabricated products (except apparel).

### **3132413 Weft Knit Fabric Mills – Contractor**

Establishments primarily engaged in knitting or finishing weft knit fabric or further fabricating weft knit fabric into products (except apparel) on a commission basis.

### **313249 Other Knit Fabric and Lace Mills**

This U.S. industry comprises establishments primarily engaged in one of the following: (1) knitting warp (i.e., flat) fabric; (2) knitting and finishing warp fabric; (3) manufacturing lace; or (4) manufacturing, dyeing, or finishing lace and lace goods. Establishments in this industry may knit only; knit and finish; or knit, finish, and further fabricate fabric products (except apparel).

The data published with NAICS code 313249 include the following SIC industries:

2258 Lace and warp knit fabric mills (pt)

2259 Knitting mills, n.e.c. (pt)

### **3132491 Other Knit Fabric and Lace Mills – Manufacturer**

Establishments primarily engaged in knitting warp (i.e., flat) fabric; knitting and finishing warp fabric; knitting, finishing, and further fabricating warp fabric products (except apparel); manufacturing lace; or manufacturing, dyeing, or finishing lace and lace goods.

### **3132492 Other Knit Fabric and Lace Mills – Jobber**

Establishments engaged as other knit fabric and lace jobbers, who perform entrepreneurial functions of a manufacturer, including buying raw materials, designing and preparing samples, arranging for fabric to be made from their materials, and marketing finished fabric.

### **3132493 Other Knit Fabric and Lace Mills – Contractor**

Establishments primarily engaged in knitting or finishing lace and other knit fabric or further fabricating lace and other knit fabric into products (except apparel) on a commission basis.

### **3133 Textile and Fabric Finishing and Fabric Coating Mills**

This NAICS industry group includes establishments classified in the following NAICS Industries: 31331, Textile and Fabric Finishing Mills; and 31332, Fabric Coating Mills.

### **31331 Textile and Fabric Finishing Mills**

This industry comprises (1) establishments primarily engaged in finishing of textiles, fabrics, and apparel, and (2) establishments of converters who buy fabric goods in the grey, have them finished on contract, and sell at wholesale. Finishing operations include: bleaching, dyeing, printing (e.g., roller, screen, flock, plisse), stonewashing, and other mechanical finishing, such as preshrinking, shrinking, sponging, calendering, mercerizing, and napping; as well as cleaning, scouring, and the preparation of natural fibers and raw stock.

### **313311 Broadwoven Fabric Finishing Mills**

This U.S. industry comprises (1) establishments primarily engaged in finishing broadwoven fabrics and (2) establishments of converters who buy broadwoven fabrics in the grey, have them finished on contract, and sell at wholesale. Finishing operations include bleaching, dyeing, printing (e.g., roller, screen, flock, plisse), and other mechanical finishing, such as preshrinking, shrinking, sponging, calendering, mercerizing and napping.

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The data published with NAICS code 313311 include the following SIC industries:

- 2231 Weaving and finishing mills, wool (pt)
- 2261 Finishing plants, cotton
- 2262 Finishing plants, synthetics
- 5131 Piece goods, notions and other dry goods (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 313311 do not include establishments primarily engaged in the sponging of fabric for tailors and dressmakers. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **3133111 Broadwoven Fabric Finishing Mills – Manufacturer**

Establishments primarily engaged in dyeing, bleaching, printing, and other finishing of purchased broadwoven fabrics.

### **3133112 Broadwoven Fabric Finishing Mills – Converter**

Establishments engaged as converters who buy broadwoven fabrics in the grey, have them finished on contract, and sell at wholesale.

### **3133113 Broadwoven Fabric Finishing Mills – Commission Finisher**

Establishments primarily engaged in dyeing, bleaching, printing, and other finishing of broadwoven fabrics on a commission basis.

### **313312 Textile and Fabric Finishing (Except Broadwoven Fabric) Mills**

This U.S. industry comprises (1) establishments primarily engaged in dyeing, bleaching, printing, and other finishing of textiles, apparel, and fabrics (except broadwoven) and (2) establishments of converters who buy fabrics (except broadwoven) in the grey, have them finished on contract, and sell at wholesale. Finishing operations include bleaching, dyeing, printing (e.g., roller, screen, flock, plisse), stonewashing, and other mechanical finishing, such as preshrinking, shrinking, sponging, calendering, mercerizing and napping; as well as cleaning, scouring, and the preparation of natural fibers and raw stock.

The data published with NAICS code 313312 include the following SIC industries:

- 2231 Weaving and finishing mills, wool (pt)
- 2257 Circular knit fabric mills (pt)
- 2258 Lace and warp knit fabric mills (pt)

2269 Finishing plants, n.e.c.

2282 Yarn throwing and winding mills (pt)

2284 Thread mills (pt)

2299 Textile goods, n.e.c. (pt)

5131 Piece goods, notions and other dry goods (pt)

### **3133121 Textile and Fabric Finishing (Except Broadwoven Fabric) Mills – Manufacturer**

Establishments primarily engaged in dyeing, bleaching, printing, and other finishing of purchased textiles, apparel, and fabrics (except broadwoven).

### **3133122 Textile and Fabric Finishing (Except Broadwoven Fabric) Mills – Converter**

Establishments engaged as converters who buy fabrics (except broadwoven) in the grey, have them finished on contract, and sell at wholesale.

### **3133123 Textile and Fabric Finishing (Except Broadwoven Fabric) Mills – Commission Finisher**

Establishments primarily engaged in dyeing, bleaching, printing, and other finishing of textiles, apparel, and fabrics (except broadwoven) on a commission basis.

### **31332 Fabric Coating Mills**

This industry comprises establishments primarily engaged in coating, laminating, varnishing, waxing, and rubberizing textiles and apparel.

### **313320 Fabric Coating Mills**

This U.S. industry comprises establishments primarily engaged in coating, laminating, varnishing, waxing, and rubberizing textiles and apparel.

The data published with NAICS code 313320 include the following SIC industries:

- 2295 Coated fabrics, not rubberized
- 3069 Fabricated rubber products, n.e.c. (pt)

### **314 Textile Product Mills**

Industries in the Textile Product Mills subsector group establishments that made textile products (except apparel). With a few exceptions, processes used in these industries are generally cut and sew (i.e., purchasing fabric and cutting and sewing to make nonapparel textile products, such as sheets and towels).

### **3141 Textile Furnishings Mills**

This NAICS industry group includes establishments classified in the following NAICS Industries: 31411, Carpet and Rug Mills; and 31412, Curtain and Linen Mills.

### **31411 Carpet and Rug Mills**

This industry comprises establishments primarily engaged in (1) manufacturing woven, tufted, and other carpets and rugs, such as art squares, floor mattings, needlepunch carpeting, and door mats and mattings, from textile materials or from twisted paper, grasses, reeds, sisal, jute, or rags and/or (2) finishing carpets and rugs.

#### **314110 Carpet and Rug Mills**

This U.S. industry comprises establishments primarily engaged in (1) manufacturing woven, tufted, and other carpets and rugs, such as art squares, floor mattings, needlepunch carpeting, and door mats and mattings, from textile materials or from twisted paper, grasses, reeds, sisal, jute, or rags and/or (2) finishing carpets and rugs.

The data published with NAICS code 314110 include the following SIC industry:

2273 Carpets and rugs

#### **31412 Curtain and Linen Mills**

This industry comprises establishments primarily engaged in manufacturing household textile products, such as curtains, draperies, linens, bedspreads, sheets, tablecloths, towels, and shower curtains, from purchased materials.

#### **314121 Curtain and Drapery Mills**

This U.S. industry comprises establishments primarily engaged in manufacturing window curtains and draperies from purchased fabrics or sheet goods. The curtains and draperies may be made on a stock or custom basis for sale to individual retail customers.

The data published with NAICS code 314121 include the following SIC industries:

2391 Curtains and draperies

5714 Drapery and upholstery stores (pt)

#### **314129 Other Household Textile Product Mills**

This U.S. industry comprises establishments primarily engaged in manufacturing household textile products (except window curtains and draperies), such as bedspreads, sheets, tablecloths, towels, and shower curtains, from purchased materials.

The data published with NAICS code 314129 include the following SIC industry:

2392 Housefurnishings, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 314129 do not include

establishments primarily engaged in the making of custom slip covers. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **3149 Other Textile Product Mills**

This industry group comprises establishments primarily engaged in making textile products, (except carpets and rugs, curtains and draperies, and other household textile products) from purchased materials.

#### **31491 Textile Bag and Canvas Mills**

This industry comprises establishments primarily engaged in manufacturing textile bags, awnings, tents, and related products from purchased textile fabrics.

##### **314911 Textile Bag Mills**

This U.S. industry comprises establishments primarily engaged in manufacturing bags from purchased textile fabrics or yarns.

The data published with NAICS code 314911 include the following SIC industries:

2392 Housefurnishings, n.e.c. (pt)

2393 Textile bags

##### **314912 Canvas and Related Product Mills**

This U.S. industry comprises establishments primarily engaged in manufacturing canvas and canvas-like products, such as awnings, sails, tarpaulins, and tents, from purchased fabrics.

The data published with NAICS code 314912 include the following SIC industry:

2394 Canvas and related products

### **31499 All Other Textile Product Mills**

This industry comprises establishments primarily engaged in manufacturing nonapparel textile products (except carpet, rugs, curtains, linens, bags, and canvas products) from purchased materials.

#### **314991 Rope, Cordage, and Twine Mills**

This U.S. industry comprises establishments primarily engaged in manufacturing rope, cable, cordage, twine, and related products from all materials (e.g., abaca, sisal, henequen, hemp, cotton, paper, jute, flax, manmade fibers including glass).

The data published with NAICS code 314991 include the following SIC industry:

2298 Cordage and twine

### **314992 Tire Cord and Tire Fabric Mills**

This U.S. industry comprises establishments primarily engaged in manufacturing cord and fabric of polyester, rayon, cotton, glass, steel, or other materials for use in reinforcing rubber tires, industrial belting, and similar uses.

The data published with NAICS code 314992 include the following SIC industry:

2296 Tire cord and fabric

### **314999 All Other Miscellaneous Textile Product Mills**

This U.S. industry comprises establishments primarily engaged in manufacturing textile products (except carpets and rugs; curtains and linens; textile bags and canvas products; rope, cordage, and twine; and tire cord and tire fabrics) from purchased materials.

The data published with NAICS code 314999 include the following SIC industries:

2299 Textile goods, n.e.c. (pt)

2395 Pleating and stitching (pt)

2396 Automotive and apparel trimmings (pt)

2399 Fabricated textile products, n.e.c. (pt)

3999 Manufacturing industries, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 314999 include establishments primarily engaged in the manufacture of other miscellaneous textile products from SIC 3999, but do not include establishments primarily engaged in the manufacture of dust rags or textile fire hoses, or engaged in the embroidery of advertising. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **315 Apparel Manufacturing**

Industries in the Apparel Manufacturing subsector group establishments with two distinct manufacturing processes: (1) cut and sew (i.e., purchasing fabric and cutting and sewing to make a garment) and (2) the manufacture of garments in establishments that first knit fabric and then cut and sew the fabric into a garment. The Apparel Manufacturing subsector includes a diverse range of establishments manufacturing full lines of ready-to-wear apparel and custom apparel: apparel contractors, performing cutting or sewing operations on materials owned by others; jobbers performing entrepreneurial functions involved in apparel manufacture; and tailors, manufacturing custom garments for individual clients are all included. Knitting, when done alone, is classified in the

Textile Mills subsector, but when knitting is combined with the production of complete garments, the activity is classified in Apparel Manufacturing.

### **3151 Apparel Knitting Mills**

This industry group comprises establishments primarily engaged in knitting apparel or knitting fabric and then manufacturing apparel. This industry group includes jobbers performing entrepreneurial functions involved in knitting apparel and accessories. Knitting fabric, without manufacturing apparel, is classified in Subsector 313, Textile Mills.

### **31511 Hosiery and Sock Mills**

This industry comprises establishments primarily engaged in knitting or knitting and finishing hosiery and socks.

### **315111 Sheer Hosiery Mills**

This U.S. industry comprises establishments primarily engaged in knitting or knitting and finishing women's, misses', and girls' full-length and knee-length sheer hosiery (except socks).

The data published with NAICS code 315111 include the following SIC industries:

2251 Women's hosiery, except socks

2252 Hosiery, n.e.c. (pt)

### **315119 Other Hosiery and Sock Mills**

This U.S. industry comprises establishments primarily engaged in knitting or knitting and finishing hosiery (except women's, misses', and girls' sheer hosiery).

The data published with NAICS code 315119 include the following SIC industry:

2252 Hosiery, n.e.c. (pt)

### **31519 Other Apparel Knitting Mills**

This industry comprises establishments primarily engaged in one of the following: (1) knitting underwear, outerwear, and/or nightwear; (2) knitting fabric and manufacturing underwear, outerwear, and/or nightwear; or (3) knitting, manufacturing, and finishing knit underwear, outerwear, and/or nightwear.

### **315191 Outerwear Knitting Mills**

This U.S. industry comprises establishments primarily engaged in one or more of the following: (1) knitting outerwear; (2) knitting fabric and manufacturing outerwear; and (3) knitting, manufacturing, and finishing knit outerwear. Examples of products made in knit outerwear mills are shirts, shorts, sweat suits, sweaters, gloves, and pants.



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The data published with NAICS code 315191 include the following SIC industries:

2253 Knit outerwear mills

2259 Knitting mills, n.e.c. (pt)

### **3151911 Outerwear Knitting Mills – Manufacturer**

Establishments primarily engaged in knitting outerwear clothing.

### **3151912 Outerwear Knitting Mills – Jobber**

Establishments engaged as knit outerwear jobbers, who perform entrepreneurial functions involved in apparel manufacture, including buying raw materials, designing and preparing samples, arranging for apparel to be made from their materials, and marketing finished apparel.

### **3151913 Outerwear Knitting Mills – Contractor**

Establishments primarily engaged in manufacturing knit outerwear on materials owned by others (commission basis).

### **315192 Underwear and Nightwear Knitting Mills**

This U.S. industry comprises establishments primarily engaged in one of the following: (1) knitting underwear and nightwear; (2) knitting fabric and manufacturing underwear and nightwear; or (3) knitting, manufacturing, and finishing knit underwear and nightwear. Examples of products produced in underwear and nightwear knitting mills are briefs, underwear T-shirts, pajamas, nightshirts, foundation garments, and panties.

The data published with NAICS code 315192 include the following SIC industries:

2254 Knit underwear mills

2259 Knitting mills, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 315192 do not include knitting mills primarily engaged in the manufacture of bath and lounge robes. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **3152 Cut and Sew Apparel Manufacturing**

This industry group comprises establishments primarily engaged in manufacturing cut and sew apparel from woven fabric or purchased knit fabric. Included in this industry group is a diverse range of establishments manufacturing full lines of ready-to-wear apparel and custom apparel: apparel contractors, performing cutting or sewing operations on materials owned by others; jobbers performing entrepreneurial functions involved in apparel

manufacture; and tailors, manufacturing custom garments for individual clients. Establishments weaving or knitting fabric, without manufacturing apparel, are classified in Subsector 313, Textile Mills.

### **31521 Cut and Sew Apparel Contractors**

This industry comprises establishments commonly referred to as contractors primarily engaged in (1) cutting materials owned by others for apparel and accessories and/or (2) sewing materials owned by others for apparel and accessories.

### **315211 Men’s and Boys’ Cut and Sew Apparel Contractors**

This U.S. industry comprises establishments commonly referred to as contractors primarily engaged in (1) cutting materials owned by others for men’s and boys’ apparel and/or (2) sewing materials owned by others for men’s and boys’ apparel.

The data published with NAICS code 315211 include the following SIC industries:

2311 Men’s and boys’ suits and coats (pt)

2321 Shirts, men’s and boys’ (pt)

2322 Men’s and boys’ underwear and nightwear (pt)

2325 Men’s and boys’ trousers and slacks (pt)

2326 Men’s and boys’ work clothing (pt)

2329 Men’s and boys’ clothing, n.e.c. (pt)

2341 Women’s and children’s underwear (pt)

2384 Robes and dressing gowns (pt)

2385 Waterproof outer garments (pt)

2395 Pleating and stitching (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 315211 do not include establishments primarily engaged in cut and sew contract work for men’s and boy’s neckwear, hats, shirts, other outerwear, fur goods, dress and work gloves, leather gloves and mittens, leather and sheep-lined clothing, apparel belts, or apparel and accessories, nec. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **315212 Women’s, Girls’, and Infants’ Cut and Sew Apparel Contractors**

This U.S. industry comprises establishments commonly referred to as contractors primarily engaged in (1) cutting materials owned by others for women’s, girls’, and infants’ apparel and accessories and/or (2) sewing materials owned by others for women’s, girls’, and infants’ apparel and accessories.

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The data published with NAICS code 315212 include the following SIC industries:

- 2331 Women's blouses and waists (pt)
- 2335 Women's dresses (pt)
- 2337 Women's suits and coats (pt)
- 2339 Women's outerwear, n.e.c. (pt)
- 2341 Women's and children's underwear (pt)
- 2342 Brassieres and allied garments (pt)
- 2361 Girls' and children's dresses and blouses (pt)
- 2369 Girls' and children's outerwear, n.e.c. (pt)
- 2384 Robes and dressing gowns (pt)
- 2385 Waterproof outer garments (pt)
- 2389 Apparel and accessories, n.e.c. (pt)
- 2395 Pleating and stitching (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 315212 do not include establishments primarily engaged in cut and sew contract work for women's, girls', and infants' hats; fur goods; dress and work gloves; leather gloves and mittens; leather and sheep-lined clothing; or apparel belts. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **31522 Men's and Boys' Cut and Sew Apparel Manufacturing**

This industry comprises establishments primarily engaged in manufacturing men's and boys' cut and sew apparel from purchased fabric. Men's and boys' clothing jobbers, who perform entrepreneurial functions involved in apparel manufacture, including buying raw materials, designing and preparing samples, arranging for apparel to be made from their materials, and marketing finished apparel, are included.

### **315221 Men's and Boys' Cut and Sew Underwear and Nightwear Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing men's and boys' underwear and nightwear from purchased fabric. Men's and boys' underwear and nightwear jobbers, who perform entrepreneurial functions involved in apparel manufacture, including buying raw materials, designing and preparing samples, arranging for apparel to be made from their materials, and marketing finished apparel, are included. Examples of products made by these establishments are briefs, bathrobes, underwear T-shirts and shorts, nightshirts, and pajamas.

The data published with NAICS code 315221 include the following SIC industries:

- 2322 Men's and boys' underwear and nightwear (pt)
- 2341 Women's and children's underwear (pt)
- 2369 Girls' and children's outerwear, n.e.c. (pt)
- 2384 Robes and dressing gowns (pt)

### **315222 Men's and Boys' Cut and Sew Suit, Coat, and Overcoat Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing men's and boys' suits, overcoats, sport coats, tuxedos, dress uniforms, and other tailored apparel (except fur and leather) from purchased fabric. Men's and boys' suit, coat, and overcoat jobbers, who perform entrepreneurial functions involved in apparel manufacture, including buying raw materials, designing and preparing samples, arranging for apparel to be made from their materials, and marketing finished apparel, are included.

The data published with NAICS code 315222 include the following SIC industries:

- 2311 Men's and boys' suits and coats (pt)
- 2369 Girls' and children's outerwear, n.e.c. (pt)
- 2385 Waterproof outer garments (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing implemented the conversion to NAICS differently. Data for NAICS industry 315222 do not include establishments primarily engaged in custom tailoring.

### **3152221 Men's and Boys' Cut and Sew Suit, Coat, and Overcoat Manufacturing – Manufacturer**

Establishments primarily engaged in manufacturing men's and boys' suits, overcoats, sport coats, tuxedos, dress uniforms, and other tailored apparel (except fur and leather) from purchased fabric.

### **3152222 - Men's and Boys' Cut and Sew Suit, Coat, and Overcoat Manufacturing - Jobber**

Establishments engaged as men's and boys' suit, coat, and overcoat jobbers, who perform entrepreneurial functions involved in apparel manufacture, including buying raw materials, designing and preparing samples, arranging for apparel to be made from their materials, and marketing finished apparel.

### **315223 Men's and Boys' Cut and Sew Shirt (Except Work Shirt) Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing men's and boys' outerwear shirts from purchased fabric. Men's and boys' shirt (except

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work shirt) jobbers, who perform entrepreneurial functions involved in apparel manufacture, including buying raw materials, designing and preparing samples, arranging for apparel to be made from their materials, and marketing finished apparel, are included. Unisex outerwear shirts, such as T-shirts and sweatshirts that are sized without specific reference to gender (i.e., adult S, M, L, XL) are included in this industry.

The data published with NAICS code 315223 include the following SIC industries:

2321 Shirts, men's and boys' (pt)

2361 Girls' and children's dresses and blouses (pt)

### **3152231 Men's and Boys' Cut and Sew Shirt (Except Work Shirt) Manufacturing – Manufacturer**

Establishments primarily engaged in manufacturing men's and boys' outerwear shirts from purchased fabric.

### **3152232 Men's and Boys' Cut and Sew Shirt (Except Work Shirt) Manufacturing – Jobber**

Establishments engaged as men's and boys' shirt (except work shirt) jobbers, who perform entrepreneurial functions involved in apparel manufacture, including buying raw materials, designing and preparing samples, arranging for apparel to be made from their materials, and marketing finished apparel.

### **315224 Men's and Boys' Cut and Sew Trouser, Slack, and Jean Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing men's and boys' jeans, dungarees, and other separate trousers and slacks (except work pants) from purchased fabric. Men's and boys' trouser, slack, and jean jobbers, who perform entrepreneurial functions involved in apparel manufacture, including buying raw materials, designing and preparing samples, arranging for apparel to be made from their materials, and marketing finished apparel, are included.

The data published with NAICS code 315224 include the following SIC industries:

2325 Men's and boys' trousers and slacks (pt)

2369 Girls' and children's outerwear, n.e.c. (pt)

### **3152241 Men's and Boys' Cut and Sew Trouser, Slack, and Jean Manufacturing – Manufacturer**

Establishments primarily engaged in manufacturing men's and boys' jeans, dungarees, and other separate trousers and slacks (except work pants) from purchased fabric.

### **3152242 Men's and Boys' Cut and Sew Trouser, Slack, and Jean Manufacturing – Jobbers**

Establishments engaged as men's and boys' trouser, slack, and jean jobbers, who perform entrepreneurial functions involved in apparel manufacture, including buying raw materials, designing and preparing samples, arranging for apparel to be made from their materials, and marketing finished apparel.

### **315225 Men's and Boys' Cut and Sew Work Clothing Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing men's and boys' work shirts, work pants (excluding jeans and dungarees), other work clothing, and washable service apparel from purchased fabric. Men's and boys' work clothing jobbers, who perform entrepreneurial functions involved in apparel manufacture, including buying raw materials, designing and preparing samples, arranging for apparel to be made from their materials, and marketing finished apparel, are included. Examples of products made by these establishments are washable service apparel, laboratory coats, work shirts, work pants (except jeans and dungarees), and hospital apparel.

The data published with NAICS code 315225 include the following SIC industry:

2326 Men's and boys' work clothing (pt)

### **3152251 Men's and Boys' Cut and Sew Work Clothing Manufacturing – Manufacturer**

Establishments primarily engaged in manufacturing men's and boys' work shirts, work pants (excluding jeans and dungarees), other work clothing, and washable service apparel from purchased fabric.

### **3152252 Men's and Boys' Cut and Sew Work Clothing Manufacturing – Jobbers**

Establishments engaged as men's and boys' work clothing jobbers, who perform entrepreneurial functions involved in apparel manufacture, including buying raw materials, designing and preparing samples, arranging for apparel to be made from their materials, and marketing finished apparel.

### **315228 Men's and Boys' Cut and Sew Other Outerwear Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing men's and boys' cut and sew outerwear from purchased fabric (except underwear, nightwear, shirts, suits, overcoats and tailored coats, separate trousers and slacks, and work clothing). Men's and boys' other outerwear jobbers, who perform entrepreneurial functions involved in apparel manufacture, including buying raw materials, designing and preparing samples,

arranging for apparel to be made from their materials, and marketing finished apparel, are included. Unisex sweat-pants and similar garments that are sized without specific reference to gender (i.e., adult S, M, L, XL) are also included in this industry. Examples of products made by these establishments are athletic clothing (except athletic uniforms), bathing suits, down coats, outerwear shorts, windbreakers and jackets, and jogging suits.

The data published with NAICS code 315228 include the following SIC industries:

2329 Men's and boys' clothing, n.e.c. (pt)

2369 Girls' and children's outerwear, n.e.c. (pt)

2385 Waterproof outer garments (pt)

### **3152281 Men's and Boys' Cut and Sew Other Outerwear Manufacturing – Manufacturer**

Establishments primarily engaged in manufacturing men's and boys' cut and sew outerwear from purchased fabric (except underwear, nightwear, shirts, suits, overcoats and tailored coats, separate trousers and slacks, and working clothing).

### **3152282 Men's and Boys' Cut and Sew Other Outerwear Manufacturing – Jobbers**

Establishments engaged as men's and boys' other outerwear jobbers, who perform entrepreneurial functions involved in apparel manufacture, including buying raw materials, designing and preparing samples, arranging for apparel to be made from their materials, and marketing finished apparel.

### **31523 Women's and Girls' Cut and Sew Apparel Manufacturing**

This industry comprises establishments primarily engaged in manufacturing women's and girls' apparel from purchased fabric. Women's and girls' clothing jobbers, who perform entrepreneurial functions involved in apparel manufacture, including buying raw materials, designing and preparing samples, arranging for apparel to be made from their materials, and marketing finished apparel, are included.

### **315231 Women's and Girls' Cut and Sew Lingerie, Loungewear, and Nightwear Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing women's and girls' bras, girdles, and other underwear; lingerie; loungewear; and nightwear from purchased fabric. Women's and girls' lingerie, loungewear, and nightwear jobbers, who perform entrepreneurial functions involved in apparel manufacture, including buying raw materials, designing and preparing samples, arranging for apparel to be made from their

materials, and marketing finished apparel, are included. Examples of products made by these establishments are bathrobes, foundation garments, nightgowns, pajamas, panties, and slips.

The data published with NAICS code 315231 include the following SIC industries:

2341 Women's and children's underwear (pt)

2342 Brassieres and allied garments (pt)

2369 Girls' and children's outerwear, n.e.c. (pt)

2384 Robes and dressing gowns (pt)

2389 Apparel and accessories, n.e.c. (pt)

### **3152311 Women's and Girls' Cut and Sew Lingerie, Loungewear, and Nightwear Manufacturing – Manufacturer**

Establishments primarily engaged in manufacturing women's and girls' bras, girdles, and other underwear; lingerie; loungewear; and nightwear from purchased fabric.

### **3152312 Women's and Girls' Cut and Sew Lingerie, Loungewear, and Nightwear Manufacturing – Jobbers**

Establishments engaged as women's and girls' lingerie, loungewear, and nightwear jobbers, who perform entrepreneurial functions involved in apparel manufacture, including buying raw materials, designing and preparing samples, arranging for apparel to be made from their materials, and marketing finished apparel.

### **315232 Women's and Girls' Cut and Sew Blouse and Shirt Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing women's and girls' blouses and shirts from purchased fabric. Women's and girls' blouse and shirt jobbers, who perform entrepreneurial functions involved in apparel manufacture, including buying raw materials, designing and preparing samples, arranging for apparel to be made from their materials, and marketing finished apparel, are included.

The data published with NAICS code 315232 include the following SIC industries:

2331 Women's blouses and waists (pt)

2361 Girls' and children's dresses and blouses (pt)

### **3152321 Women's and Girls' Cut and Sew Blouse and Shirt Manufacturing – Manufacturer**

Establishments primarily engaged in manufacturing women's and girls' blouses and shirts from purchased fabric.

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### **3152322 Women's and Girls' Cut and Sew Blouse and Shirt Manufacturing – Jobbers**

Establishments engaged as women's and girls' blouse and shirt jobbers, who perform entrepreneurial functions involved in apparel manufacture, including buying raw materials, designing and preparing samples, arranging for apparel to be made from their materials, and marketing finished apparel.

### **315233 Women's and Girls' Cut and Sew Dress Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing women's and girls' dresses from purchased fabric. Women's and girls' dress jobbers, who perform entrepreneurial functions involved in apparel manufacture, including buying raw materials, designing and preparing samples, arranging for apparel to be made from their materials, and marketing finished apparel, are included.

The data published with NAICS code 315233 include the following SIC industries:

2335 Women's dresses (pt)

2361 Girls' and children's dresses and blouses (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing implemented the conversion to NAICS differently. Data for NAICS industry 315233 do not include establishments primarily engaged in custom tailoring.

### **3152331 Women's and Girls' Cut and Sew Dress Manufacturing – Manufacturer**

Establishments primarily engaged in manufacturing women's and girls' dresses from purchased fabric.

### **3152332 Women's and Girls' Cut and Sew Dress Manufacturing – Jobbers**

Establishments engaged as women's and girls' dress jobbers, who perform entrepreneurial functions involved in apparel manufacture, including buying raw materials, designing and preparing samples, arranging for apparel to be made from their materials, and marketing finished apparel.

### **315234 Women's and Girls' Cut and Sew Suit, Coat, Tailored Jacket, and Skirt Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing women's and girls' suits, pantsuits, skirts, tailored jackets, vests, raincoats, and other tailored coats, (except fur and leather coats) from purchased fabric. Women's and girls' suit, coat, tailored jacket, and skirt jobbers, who perform entrepreneurial

functions involved in apparel manufacture, including buying raw materials, designing and preparing samples, arranging for apparel to be made from their materials, and marketing finished apparel, are included.

The data published with NAICS code 315234 include the following SIC industries:

2337 Women's suits and coats (pt)

2369 Girls' and children's outerwear, n.e.c. (pt)

2385 Waterproof outer garments (pt)

### **3152341 Women's and Girls' Cut and Sew Suit, Coat, Tailored Jacket, and Skirt Manufacturing – Manufacturer**

Establishments primarily engaged in manufacturing women's and girls' suits, pantsuits, skirts, tailored jackets, vests, raincoats, and other tailored coats, (except fur and leather coats) from purchased fabric.

### **3152342 Women's and Girls' Cut and Sew Suit, Coat, Tailored Jacket, and Skirt Manufacturing – Jobbers**

Establishments engaged as women's and girls' suit, coat, tailored jacket, and skirt jobbers, who perform entrepreneurial functions involved in apparel manufacture, including buying raw materials, designing and preparing samples, arranging for apparel to be made from their materials, and marketing finished apparel.

### **315239 Women's and Girls' Cut and Sew Other Outerwear Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing women's and girls' cut and sew apparel from purchased fabric (except underwear, lingerie, nightwear, blouses, shirts, dresses, suits, tailored coats, tailored jackets, and skirts). Women's and girls' other outerwear clothing jobbers, who perform entrepreneurial functions involved in apparel manufacture, including buying raw materials, designing and preparing samples, arranging for apparel to be made from their materials, and marketing finished apparel, are included. Examples of products made by these establishments are bathing suits, down coats, sweaters, jogging suits, outerwear pants and shorts, and windbreakers.

The data published with NAICS code 315239 include the following SIC industries:

2339 Women's outerwear, n.e.c. (pt)

2369 Girls' and children's outerwear, n.e.c. (pt)

2385 Waterproof outer garments (pt)

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### **3152391 Women's and Girls' Cut and Sew Other Outerwear Manufacturing – Manufacturer**

Establishments primarily engaged in manufacturing women's and girls' cut and sew apparel from purchased fabric (except underwear, lingerie, nightwear, blouses, shirts, dresses, suits, tailored coats, tailored jackets, and skirts).

### **3152392 Women's and Girls' Cut and Sew Other Outerwear Manufacturing – Jobbers**

Establishments engaged as women's and girls' other outerwear clothing jobbers, who perform entrepreneurial functions involved in apparel manufacture, including buying raw materials, designing and preparing samples, arranging for apparel to be made from their materials, and marketing finished apparel.

### **31529 Other Cut and Sew Apparel Manufacturing**

This industry comprises establishments primarily engaged in manufacturing cut and sew apparel from purchased fabric (except men's, boys', women's, and girls' apparel). This industry includes establishments manufacturing apparel, such as fur apparel, leather apparel, infants' apparel, costumes, and clerical vestments.

### **315291 Infants' Cut and Sew Apparel Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing infants' dresses, blouses, shirts, and all other infants' wear from purchased fabric. Infants' clothing jobbers, who perform entrepreneurial functions involved in apparel manufacture, including buying raw materials, designing and preparing samples, arranging for apparel to be made from their materials, and marketing finished apparel, are included. For the purposes of classification, the term "infants' apparel" includes apparel for young children of an age not exceeding 24 months.

The data published with NAICS code 315291 include the following SIC industries:

- 2341 Women's and children's underwear (pt)
- 2361 Girls' and children's dresses and blouses (pt)
- 2369 Girls' and children's outerwear, n.e.c. (pt)
- 2385 Waterproof outer garments (pt)

### **3152911 Infants' Cut and Sew Apparel Manufacturing – Manufacturer**

Establishments primarily engaged in manufacturing infants' dresses, blouses, shirts, and all other infants' wear from purchased fabric. For the purposes of classification, the term "infants' apparel" includes apparel for young children of an age not exceeding 24 months.

### **3152912 Infants' Cut and Sew Apparel Manufacturing – Jobbers**

Establishments engaged as infants' clothing jobbers, who perform entrepreneurial functions involved in apparel manufacture, including buying raw materials, designing and preparing samples, arranging for apparel to be made from their materials, and marketing finished apparel. For the purposes of classification, the term "infants' apparel" includes apparel for young children of an age not exceeding 24 months.

### **315292 Fur and Leather Apparel Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing cut and sew fur and leather apparel, and sheep-lined clothing. Fur and leather apparel jobbers, who perform entrepreneurial functions involved in apparel manufacture, including buying raw materials, designing and preparing samples, arranging for apparel to be made from their materials, and marketing finished apparel, are included.

The data published with NAICS code 315292 include the following SIC industries:

- 2371 Fur goods
- 2386 Leather and sheep-lined clothing

### **315299 All Other Cut and Sew Apparel Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing cut and sew apparel from purchased fabric (except cut and sew apparel contractors; men's and boys' cut and sew underwear, nightwear, suits, coats, shirts, trousers, work clothing, and other outerwear; women's and girls' lingerie, blouses, shirts, dresses, suits, coats, and other outerwear; infants' apparel; and fur and leather apparel). Clothing jobbers for these products, who perform entrepreneurial functions involved in apparel manufacture, including buying raw materials, designing and preparing samples, arranging for apparel to be made from their materials, and marketing finished apparel, are included. Examples of products made by these establishments are team athletic uniforms, band uniforms, academic caps and gowns, clerical vestments, and costumes.

The data published with NAICS code 315299 include the following SIC industries:

- 2329 Men's and boys' clothing, n.e.c. (pt)
- 2339 Women's outerwear, n.e.c. (pt)
- 2389 Apparel and accessories, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 315299 do not include establishments primarily engaged in the manufacture of

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waterproof rubber and plastic outerwear or rubber pants and raincoats. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **3152991 All Other Cut and Sew Apparel Manufacturing – Manufacturer**

Establishments primarily engaged in manufacturing cut and sew apparel from purchased fabric (except cut and sew apparel contractors; men's and boys' cut and sew underwear, nightwear, suits, coats, shirts, trousers, work clothing, and other outerwear; women's and girls' lingerie, blouses, shirts, dresses, suits, coats, and other outerwear; infants' apparel; and fur and leather apparel). Examples of products made by these establishments are team athletic uniforms, band uniforms, academic caps and gowns, clerical vestments, and costumes.

### **3152992 All Other Cut and Sew Apparel Manufacturing – Jobbers**

Establishments engaged as clothing jobbers (except cut and sew apparel contractors; men's and boys' cut and sew underwear, nightwear, suits, coats, shirts, trousers, work clothing, and other outerwear; women's and girls' lingerie, blouses, shirts, dresses, suits, coats, and other outerwear; infants' apparel; and fur and leather apparel), who perform entrepreneurial functions involved in apparel manufacture, including buying raw materials, designing and preparing samples, arranging for apparel to be made from their materials, and marketing finished apparel. Examples of these products are team athletic uniforms, band uniforms, academic caps and gowns, clerical vestments, and costumes.

### **3159 Apparel Accessories and Other Apparel Manufacturing**

This industry group comprises establishments primarily engaged in manufacturing apparel accessories and other apparel (except apparel knitting mills, apparel contractors, men's and boys' cut and sew apparel, women's and girls' cut and sew apparel, infants' cut and sew apparel, fur and leather apparel, and all other cut and sew apparel). This industry group includes jobbers performing entrepreneurial functions involved in manufacturing apparel accessories.

### **31599 Apparel Accessories and Other Apparel Manufacturing**

This industry comprises establishments primarily engaged in manufacturing apparel and accessories (except apparel knitting mills, cut and sew apparel contractors, men's and boys' cut and sew apparel, women's and girls' cut and sew apparel, and other cut and sew apparel). Jobbers, who perform entrepreneurial functions involved in apparel accessories manufacture, including buying raw materials, designing and preparing samples, arranging for

apparel accessories to be made from their materials, and marketing finished apparel accessories, are included. Examples of products made by these establishments are belts, caps, gloves (except medical, sporting, safety), hats, and neckties.

### **315991 Hat, Cap, and Millinery Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing cut and sew hats, caps, millinery, and hat bodies from purchased fabric. Jobbers, who perform entrepreneurial functions involved in hat, cap, and millinery manufacture, including buying raw materials, designing and preparing samples, arranging for hats, caps, and millinery to be made from their materials, and marketing finished hats, caps, and millinery, are included.

The data published with NAICS code 315991 include the following SIC industry:

2353 Hats, caps, and millinery

### **315992 Glove and Mitten Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing cut and sew gloves (except rubber, metal, and athletic gloves) and mittens from purchased fabric, fur, leather, or from combinations of fabric, fur, or leather. Jobbers, who perform entrepreneurial functions involved in glove and mitten manufacture, including buying raw materials, designing and preparing samples, arranging for gloves and mittens to be made from their materials, and marketing finished gloves and mittens, are included.

The data published with NAICS code 315992 include the following SIC industries:

2381 Fabric gloves and mittens

3151 Leather gloves and mittens

### **315993 Men's and Boys' Neckwear Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing men's and boys' cut and sew neckties, scarves, and mufflers from purchased fabric, leather, or from combinations of leather and fabric. Men's and boys' neckwear jobbers, who perform entrepreneurial functions involved in neckwear manufacture, including buying raw materials, designing and preparing samples, arranging for neckwear to be made from their materials, and marketing finished neckwear, are included.

The data published with NAICS code 315993 include the following SIC industry:

2323 Men's and boys' neckwear

### **315999 Other Apparel Accessories and Other Apparel Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing apparel and apparel accessories (except apparel knitting mills; cut and sew apparel contractors; cut and sew apparel; hats and caps; mittens and

gloves; and men's and boys' neckwear). Jobbers for these products, who perform entrepreneurial functions involved in other apparel and accessory manufacture, including buying raw materials, designing and preparing samples, arranging for other apparel and accessories to be made from their materials, and marketing finished other apparel and accessories, are included. Examples of products made by these establishments are apparel trimmings and findings, belts, women's scarves, suspenders, and waterproof outerwear.

The data published with NAICS code 315999 include the following SIC industries:

2339 Women's outerwear, n.e.c. (pt)

2385 Waterproof outer garments (pt)

2387 Apparel belts

2389 Apparel and accessories, n.e.c. (pt)

2396 Automotive and apparel trimmings (pt)

2399 Fabricated textile products, n.e.c. (pt)

5699 Miscellaneous apparel and accessory stores (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing implemented the conversion to NAICS differently. Data for NAICS industry 315999 include establishments primarily engaged in custom tailoring but do not include establishments primarily engaged in the manufacture of rubber bibs, aprons, and bathing caps.

### **316 Leather and Allied Product Manufacturing**

Establishments in the Leather and Allied Product Manufacturing subsector transform hides into leather by tanning or curing and fabricating the leather into products for final consumption. It also includes the manufacture of similar products from other materials, including products (except apparel) made from "leather substitutes," such as rubber, plastics, or textiles. Rubber footwear, textile luggage, and plastics purses or wallets are examples of "leather substitute" products included in this group. The products made from leather substitutes are included in this subsector because they are made in similar ways leather products are made (e.g., luggage). They are made in the same establishments, so it is not practical to separate them.

The inclusion of leather making in this subsector is partly because leather tanning is a relatively small industry that has few close neighbors as a production process, partly because leather is an input to some of the other products classified in this subsector and partly for historical reasons.

### **3161 Leather and Hide Tanning and Finishing**

This NAICS industry group includes establishments classified in NAICS Industry 31611, Leather and Hide Tanning and Finishing.

#### **31611 Leather and Hide Tanning and Finishing**

This industry comprises establishments primarily engaged in one or more of the following: (1) tanning, currying, and finishing hides and skins; (2) having others process hides and skins on a contract basis; and (3) dyeing or dressing furs.

##### **316110 Leather and Hide Tanning and Finishing**

This U.S. industry comprises establishments primarily engaged in one or more of the following: (1) tanning, currying, and finishing hides and skins; (2) having others process hides and skins on a contract basis; and (3) dyeing or dressing furs.

The data published with NAICS code 316110 include the following SIC industries:

3111 Leather tanning and finishing

3999 Manufacturing industries, n.e.c. (pt)

### **3162 Footwear Manufacturing**

This NAICS industry group includes establishments classified in NAICS Industry 31621, Footwear Manufacturing.

#### **31621 Footwear Manufacturing**

This industry comprises establishments primarily engaged in manufacturing footwear (except orthopedic extension footwear).

##### **316211 Rubber and Plastics Footwear Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing rubber and plastics footwear with vulcanized rubber or plastics soles, molded or cemented to rubber, plastics, or fabric uppers, and rubber and plastics protective footwear.

The data published with NAICS code 316211 include the following SIC industry:

Rubber and plastics footwear

##### **316212 House Slipper Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing house slippers and slipper socks, regardless of material.

The data published with NAICS code 316212 include the following SIC industry:

3142 House slippers



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### **316213 Men's Footwear (Except Athletic) Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing men's footwear designed primarily for dress, street, and work. This industry includes men's shoes with rubber or plastics soles and leather or vinyl uppers.

The data published with NAICS code 316213 include the following SIC industry:

3143 Men's footwear, except athletic

### **316214 Women's Footwear (Except Athletic) Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing women's footwear designed for dress, street, and work. This industry includes women's shoes with rubber or plastics soles and leather or vinyl uppers.

The data published with NAICS code 316214 include the following SIC industry:

3144 Women's footwear, except athletic

### **316219 Other Footwear Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing other footwear (except rubber and plastics footwear; house slippers; men's footwear (except athletic); and women's footwear (except athletic)).

The data published with NAICS code 316219 include the following SIC industry:

3149 Footwear, except rubber, n.e.c.

### **3169 Other Leather and Allied Product Manufacturing**

This NAICS industry group includes establishments classified in NAICS Industry 31699, Other Leather and Allied Product Manufacturing.

### **31699 Other Leather and Allied Product Manufacturing**

This industry comprises establishments primarily engaged in manufacturing leather products (except footwear and apparel) from purchased leather or leather substitutes (e.g., fabric, plastics).

### **316991 Luggage Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing luggage of any material.

The data published with NAICS code 316991 include the following SIC industry:

3161 Luggage

### **316992 Women's Handbag and Purse Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing women's handbags and purses of any material (except precious metal).

The data published with NAICS code 316992 include the following SIC industry:

3171 Women's handbags and purses

### **316993 Personal Leather Goods (Except Women's Handbag and Purse) Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing personal leather goods (i.e., small articles of any material (except metal) normally carried on or about the person or in a handbag). Examples of personal leather goods made by these establishments are billfolds, coin purses, key cases, toilet kits, and watchbands (except metal).

The data published with NAICS code 316993 include the following SIC industry:

3172 Personal leather goods, n.e.c.

### **316999 All Other Leather Goods Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing leather goods (except footwear, luggage, handbags, purses, and personal leather goods).

The data published with NAICS code 316999 include the following SIC industries:

3131 Footwear cut stock and findings (pt)

3199 Leather goods, n.e.c.

### **321 Wood Product Manufacturing**

Industries in the Wood Product Manufacturing subsector manufacture wood products, such as lumber, plywood, veneers, wood containers, wood flooring, wood trusses, manufactured homes (i.e., mobile home), and prefabricated wood buildings. The production processes of the Wood Product Manufacturing subsector include sawing, planing, shaping, laminating, and assembling of wood products starting from logs that are cut into bolts, or lumber that then may be further cut, or shaped by lathes or other shaping tools. The lumber or other transformed wood shapes may also be subsequently planed or smoothed, and assembled into finished products, such as wood containers.

The Wood Product Manufacturing subsector includes establishments that make wood products from logs and bolts that are sawed and shaped, and establishments that purchase sawed lumber and make wood products. With the exception of sawmills and wood preservation establishments, the establishments are grouped into industries mainly based on the specific products manufactured.

## **3211 Sawmills and Wood Preservation**

This industry group comprises establishments whose primary production process begins with logs or bolts that are transformed into boards, dimension lumber, beams, timbers, poles, ties, shingles, shakes, siding, and wood chips. Establishments that cut and treat round wood and/or treat wood products made in other establishments to prevent rotting by impregnation with creosote or other chemical compounds are also included in this industry group.

### **32111 Sawmills and Wood Preservation**

This industry comprises establishments primarily engaged in one or more of the following: (1) sawing dimension lumber, boards, beams, timber, poles, ties, shingles, shakes, siding, and wood chips from logs or bolts; (2) sawing round wood poles, pilings, and posts and treating them with preservatives; and (3) treating wood sawed, planed, or shaped in other establishments with creosote or other preservatives to prevent decay and to protect against fire and insects. Sawmills may plane the rough lumber that they make with a planing machine to achieve smoothness and uniformity of size.

#### **321113 Sawmills**

This U.S. industry comprises establishments primarily engaged in sawing dimension lumber, boards, beams, timbers, poles, ties, shingles, shakes, siding, and wood chips from logs or bolts. Sawmills may plane the rough lumber that they make with a planing machine to achieve smoothness and uniformity of size.

The data published with NAICS code 321113 include the following SIC industries:

2421 Sawmills and planing mills, general (pt)

2429 Special product sawmills, n.e.c. (pt)

2439 Structural wood members, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing implemented the conversion to NAICS differently. Data for NAICS industry 321113 include establishments primarily engaged in the manufacture of lumber members made from logs and bolts, but do not include establishments primarily engaged in the manufacture of hardwood dimension made from logs and bolts. The NAICS definitions will be fully implemented with the 2002 Economic Census.

#### **321114 Wood Preservation**

This U.S. industry comprises establishments primarily engaged in (1) treating wood sawed, planed, or shaped in other establishments with creosote or other preservatives,

such as chromated copper arsenate, to prevent decay and to protect against fire and insects and/or (2) sawing round wood poles, pilings, and posts and treating them with preservatives.

The data published with NAICS code 321114 include the following SIC industry:

2491 Wood preserving

## **3212 Veneer, Plywood, and Engineered Wood Product Manufacturing**

This NAICS industry group includes establishments classified in NAICS Industry 32121, Veneer, Plywood, and Engineered Wood Product Manufacturing.

### **32121 Veneer, Plywood, and Engineered Wood Product Manufacturing**

This industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing veneer and/or plywood; (2) manufacturing engineered wood members; and (3) manufacturing reconstituted wood products. This industry includes manufacturing plywood from veneer made in the same establishment or from veneer made in other establishments, and manufacturing plywood faced with nonwood materials, such as plastics or metal.

#### **321211 Hardwood Veneer and Plywood Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing hardwood veneer and/or hardwood plywood.

The data published with NAICS code 321211 include the following SIC industry:

2435 Hardwood veneer and plywood

#### **321212 Softwood Veneer and Plywood Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing softwood veneer and/or softwood plywood.

The data published with NAICS code 321212 include the following SIC industry:

2436 Softwood veneer and plywood

#### **321213 Engineered Wood Member (Except Truss) Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing fabricated or laminated wood arches and/or other fabricated or laminated wood structural members.

The data published with NAICS code 321213 include the following SIC industry:

2439 Structural wood members, n.e.c. (pt)

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### **321214 Truss Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing laminated or fabricated wood roof and floor trusses.

The data published with NAICS code 321214 include the following SIC industry:

2439 Structural wood members, n.e.c. (pt)

### **321219 Reconstituted Wood Product Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing reconstituted wood sheets and boards.

The data published with NAICS code 321219 include the following SIC industry:

2493 Reconstituted wood products

### **3219 Other Wood Product Manufacturing**

This industry group comprises establishments primarily engaged in manufacturing wood products (except establishments operating sawmills and wood preservation facilities; and establishments manufacturing veneer, plywood, or engineered wood products).

#### **32191 Millwork**

This industry comprises establishments primarily engaged in manufacturing hardwood and softwood cut stock and dimension stock (i.e., shapes); wood windows and wood doors; and other millwork including wood flooring. Dimension stock or cut stock is defined as lumber and worked wood products cut or shaped to specialized sizes. These establishments generally use woodworking machinery, such as jointers, planers, lathes, and routers to shape wood.

#### **321911 Wood Window and Door Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing window and door units, sash, window and door frames, and doors from wood or wood clad with metal or plastics.

The data published with NAICS code 321911 include the following SIC industry:

2431 Millwork (pt)

#### **321912 Cut Stock, Resawing Lumber, and Planing**

This U.S. industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing dimension lumber from purchased lumber; (2) manufacturing dimension stock (i.e., shapes) or cut stock; (3) resawing the output of sawmills; and (4) planing purchased lumber. These establishments generally use woodworking machinery, such as jointers, planers, lathes, and routers to shape wood.

The data published with NAICS code 321912 include the following SIC industries:

2421 Sawmills and planing mills, general (pt)

2426 Hardwood dimension and flooring mills (pt)

2439 Structural wood members, n.e.c. (pt)

2499 Wood products, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing implemented the conversion to NAICS differently. Data for NAICS industry 321912 include establishments primarily engaged in the manufacture of hardwood dimension made from logs and bolts, lumber members made from purchased lumber, and semi-machined and fully-machined softwood dimension lumber, but do not include establishments primarily engaged in the manufacture of staves from purchased lumber. The NAICS definitions will be fully implemented with the 2002 Economic Census.

#### **321918 Other Millwork (Including Flooring)**

This U.S. industry comprises establishments primarily engaged in manufacturing millwork (except wood windows, wood doors, and cut stock).

The data published with NAICS code 321918 include the following SIC industries:

2421 Sawmills and planing mills, general (pt)

2426 Hardwood dimension and flooring mills (pt)

2431 Millwork (pt)

#### **32192 Wood Container and Pallet Manufacturing**

This industry comprises establishments primarily engaged in manufacturing wood pallets, wood box shoo, wood boxes, other wood containers, and wood parts for pallets and containers.

#### **321920 Wood Container and Pallet Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing wood pallets, wood box shoo, wood boxes, other wood containers, and wood parts for pallets and containers.

The data published with NAICS code 321920 include the following SIC industries:

2429 Special product sawmills, n.e.c. (pt)

2441 Nailed wood boxes & shoo

2448 Wood pallets and skids

2449 Wood containers, n.e.c.

2499 Wood products, n.e.c. (pt)

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This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 321920 include establishments primarily engaged in the manufacture of cooperage headings and staves made of purchased lumber. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **32199 All Other Wood Product Manufacturing**

This industry comprises establishments primarily engaged in manufacturing wood products (except establishments operating sawmills and wood preservation facilities; and establishments manufacturing veneer, plywood, engineered wood products, millwork, wood containers, or pallets).

#### **321991 Manufactured Home (Mobile Home) Manufacturing**

This U.S. industry comprises establishments primarily engaged in making manufactured homes (i.e., mobile homes) and nonresidential mobile buildings. Manufactured homes are designed to accept permanent water, sewer, and utility connections and although equipped with wheels, they are not intended for regular highway movement.

The data published with NAICS code 321991 include the following SIC industry:

2451 Mobile homes

#### **321992 Prefabricated Wood Building Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing prefabricated wood buildings and wood sections and panels for prefabricated wood buildings.

The data published with NAICS code 321992 include the following SIC industry:

2452 Prefabricated wood buildings

#### **321999 All Other Miscellaneous Wood Product Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing wood products (except establishments operating sawmills and preservation facilities; establishments manufacturing veneer, engineered wood products, millwork, wood containers, pallets, and wood container parts; and establishments making manufactured homes (i.e., mobile homes) and prefabricated buildings and components).

The data published with NAICS code 321999 include the following SIC industries:

2421 Sawmills and planing mills, general (pt)

2429 Special product sawmills, n.e.c. (pt)

2499 Wood products, n.e.c. (pt)

3131 Footwear cut stock and findings (pt)

3999 Manufacturing industries, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 321999 include establishments primarily engaged in the manufacture of wood cooling towers, but do not include establishments primarily engaged in the manufacture of finished metal moldings for mirrors and pictures, semi-machined and fully-machined softwood dimension, or cooperage headings. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **322 Paper Manufacturing**

Industries in the Paper Manufacturing subsector make pulp, paper, or converted paper products. The manufacturing of these products is grouped together because they constitute a series of vertically connected processes. More than one is often carried out in a single establishment. There are essentially three activities. The manufacturing of pulp involves separating the cellulose fibers from other impurities in wood or used paper. The manufacturing of paper involves matting these fibers into a sheet. Converted paper products are made from paper and other materials by various cutting and shaping techniques and includes coating and laminating activities.

The Paper Manufacturing subsector is subdivided into two industry groups, the first for the manufacturing of pulp and paper and the second for the manufacturing of converted paper products. Paper making is treated as the core activity of the subsector. Therefore, any establishment that makes paper (including paperboard), either alone or in combination with pulp manufacturing or paper converting, is classified as a paper or paperboard mill. Establishments that make pulp without making paper are classified as pulp mills. Pulp mills, paper mills and paperboard mills comprise the first industry group.

Establishments that make products from purchased paper and other materials make up the second industry group, Converted Paper Product Manufacturing. This general activity is then subdivided based, for the most part, on process distinctions. Paperboard container manufacturing uses corrugating, cutting, and shaping machinery to form paperboard into containers. Paper bag and coated and treated paper manufacturing establishments cut and coat paper and foil. Stationery product manufacturing establishments make a variety of paper products used for writing, filing, and similar applications. Other converted paper product manufacturing includes, in particular, the conversion of sanitary paper stock into such things as tissue paper and disposable diapers.

An important process used in the Paper Bag and Coated and Treated Paper Manufacturing industry is lamination, often combined with coating. Lamination and coating makes a composite material with improved properties of strength, impermeability, and so on. The laminated materials may be paper, metal foil, or plastics film. While paper is often one of the components, it is not always. Lamination of plastics film to plastics film is classified in the NAICS Subsector 326, Plastics and Rubber Products Manufacturing, because establishments that do this often first make the film.

The same situation holds with respect to bags. The manufacturing of bags from plastics only, whether or not laminated, is classified in Subsector 326, Plastics and Rubber Products Manufacturing, but all other bag manufacturing is classified in this subsector.

Excluded from this subsector are photosensitive papers. These papers are chemically treated and are classified in Industry 32599, All Other Chemical Product and Preparation Manufacturing.

### **3221 Pulp, Paper, and Paperboard Mills**

This industry group comprises establishments primarily engaged in manufacturing pulp, paper, or paperboard.

#### **32211 Pulp Mills**

This industry comprises establishments primarily engaged in manufacturing pulp without manufacturing paper or paperboard. The pulp is made by separating the cellulose fibers from the other impurities in wood or other materials, such as used or recycled rags, linters, scrap paper, and straw.

##### **322110 Pulp Mills**

This U.S. industry comprises establishments primarily engaged in manufacturing pulp without manufacturing paper or paperboard. The pulp is made by separating the cellulose fibers from the other impurities in wood or other materials, such as used or recycled rags, linters, scrap paper, and straw.

The data published with NAICS code 322110 include the following SIC industry:

2611 Pulp mills

##### **32212 Paper Mills**

This industry comprises establishments primarily engaged in manufacturing paper from pulp. These establishments may manufacture or purchase pulp. In addition, the establishments may convert the paper they make. The activity of making paper classifies an establishment into this industry regardless of the output.

##### **322121 Paper (Except Newsprint) Mills**

This U.S. industry comprises establishments primarily engaged in manufacturing paper (except newsprint and uncoated groundwood paper) from pulp. These establishments may manufacture or purchase pulp. In addition, the establishments may also convert the paper they make.

The data published with NAICS code 322121 include the following SIC industries:

2621 Paper mills (pt)

2676 Sanitary paper products (pt)

3842 Surgical appliances and supplies (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 322121 include paper mills which convert sanitary paper stock into sanitary paper products, but do not include paper mills which are primarily engaged in the manufacture of other converted paper products. The NAICS definitions will be fully implemented with the 2002 Economic Census.

##### **3221211 Paper (Except Newsprint) Mills – Integrated Producer**

Establishments primarily engaged in manufacturing paper (except newsprint and uncoated groundwood paper) from pulp in combination with pulp manufacture.

##### **3221212 Paper (Except Newsprint) Mills – Nonintegrated Producer**

Establishments primarily engaged in manufacturing paper (except newsprint and uncoated groundwood paper) from pulp not in combination with pulp manufacture.

##### **322122 Newsprint Mills**

This U.S. industry comprises establishments primarily engaged in manufacturing newsprint and uncoated groundwood paper from pulp. These establishments may manufacture or purchase pulp. In addition, the establishments may also convert the paper they make.

The data published with NAICS code 322122 include the following SIC industry:

2621 Paper mills (pt)

##### **3221221 Newsprint Mills – Integrated Producer**

Establishments primarily engaged in manufacturing newsprint and uncoated groundwood paper from pulp in combination with pulp manufacture.

##### **3221222 Newsprint Mills – Nonintegrated Producer**

Establishments primarily engaged in manufacturing newsprint and uncoated groundwood paper from pulp not in combination with pulp manufacture.

##### **32213 Paperboard Mills**

This industry comprises establishments primarily engaged in manufacturing paperboard from pulp. These establishments may manufacture or purchase pulp. In addition, the establishments may also convert the paperboard they make.

### **322130 Paperboard Mills**

This U.S. industry comprises establishments primarily engaged in manufacturing paperboard from pulp. These establishments may manufacture or purchase pulp. In addition, the establishments may also convert the paperboard they make.

The data published with NAICS code 322130 include the following SIC industry:

2631 Paperboard mills

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 322130 do not include paperboard mills primarily engaged in converting paperboard into paperboard products. The NAICS definitions will be fully implemented with the 2002 Economic Census.

#### **3221301 Paperboard Mills – Integrated Producer**

Establishments primarily engaged in manufacturing paperboard from pulp in combination with pulp manufacture.

#### **3221302 Paperboard Mills – Nonintegrated Producer**

Establishments primarily engaged in manufacturing paperboard from pulp not in combination with pulp manufacture or paperboard converting.

### **3222 Converted Paper Product Manufacturing**

This industry group comprises establishments primarily engaged in converting paper or paperboard without manufacturing paper or paperboard.

#### **32221 Paperboard Container Manufacturing**

This industry comprises establishments primarily engaged in converting paperboard into containers without manufacturing paperboard. These establishments use corrugating, cutting, and shaping machinery to form paperboard into containers. Products made by these establishments include boxes; corrugated sheets, pads, and pallets; paper dishes; and fiber drums and reels.

#### **322211 Corrugated and Solid Fiber Box Manufacturing**

This U.S. industry comprises establishments primarily engaged in laminating purchased paper or paperboard into corrugated or solid fiber boxes and related products, such as pads, partitions, pallets, and corrugated paper without manufacturing paperboard. These boxes are generally used for shipping.

The data published with NAICS code 322211 include the following SIC industry:

2653 Corrugated and solid fiber boxes

### **322212 Folding Paperboard Box Manufacturing**

This U.S. industry comprises establishments primarily engaged in converting paperboard (except corrugated) into folding paperboard boxes without manufacturing paper and paperboard.

The data published with NAICS code 322212 include the following SIC industry:

2657 Folding paperboard boxes

#### **322213 Setup Paperboard Box Manufacturing**

This U.S. industry comprises establishments primarily engaged in converting paperboard into setup paperboard boxes (i.e., rigid-sided boxes not shipped flat) without manufacturing paperboard.

The data published with NAICS code 322213 include the following SIC industry:

2652 Setup paperboard boxes

#### **322214 Fiber Can, Tube, Drum, and Similar Products Manufacturing**

This U.S. industry comprises establishments primarily engaged in converting paperboard into fiber cans, tubes, drums, and similar products without manufacturing paperboard.

The data published with NAICS code 322214 include the following SIC industry:

2655 Fiber cans, drums, and similar products

#### **322215 Nonfolding Sanitary Food Container Manufacturing**

This U.S. industry comprises establishments primarily engaged in converting sanitary foodboard into food containers (except folding).

The data published with NAICS code 322215 include the following SIC industry:

2656 Sanitary food containers

#### **32222 Paper Bag and Coated and Treated Paper Manufacturing**

This industry comprises establishments primarily engaged in one or more of the following: (1) cutting and coating paper and paperboard; (2) cutting and laminating paper and paperboard and other flexible materials (except plastics film to plastics film); (3) manufacturing bags or multiwall bags or sacks of paper, metal foil, coated paper, or laminates or coated combinations of paper and foil with plastics film; (4) manufacturing laminated aluminum and other converted metal foils from purchased foils; and (5) surface coating paper or paperboard.

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### **322221 Coated and Laminated Packaging Paper and Plastics Film Manufacturing**

This U.S. industry comprises establishments primarily engaged in performing one or more of the following activities associated with the manufacturing of packaging materials: (1) cutting and coating paper; and (2) cutting and laminating paper with other flexible materials (except plastics to plastics or foil to paper laminates). The products made in this industry are made from purchased sheet materials and may be printed in the same establishment.

The data published with NAICS code 322221 include the following SIC industry:

2671 Paper - coated and laminated, packaging (pt)

### **322222 Coated and Laminated Paper Manufacturing**

This U.S. industry comprises establishments primarily engaged in performing one or more of the following activities associated with making products designed for purposes other than packaging: (1) cutting and coating paper; (2) cutting and laminating paper and other flexible materials (except plastics film to plastics film); and (3) manufacturing converted aluminum and other metal foils for non-packaging uses from purchased foils. The products made in this industry are made from purchased sheet materials and may be printed in the same establishment.

The data published with NAICS code 322222 include the following SIC industries:

2672 Paper - coated and laminated, n.e.c.

2679 Converted paper products, n.e.c. (pt)

### **322223 Plastics, Foil, and Coated Paper Bag Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing bags of coated paper, of metal foil, or of laminated or coated combinations of plastics, foil, and paper, whether or not printed.

The data published with NAICS code 322223 include the following SIC industry:

2673 Bags - plastics, laminated, and coated (pt)

### **322224 Uncoated Paper and Multiwall Bag Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing uncoated paper bags or multiwall bags and sacks.

The data published with NAICS code 322224 include the following SIC industry:

2674 Bags - uncoated paper and multiwall

### **322225 Laminated Aluminum Foil Manufacturing for Flexible Packaging Uses**

This U.S. industry comprises establishments primarily engaged in laminating aluminum and other metal foil into products with flexible packaging uses or gift wrap and other packaging wrap applications.

The data published with NAICS code 322225 include the following SIC industry:

3497 Metal foil and leaf (pt)

### **322226 Surface-Coated Paperboard Manufacturing**

This U.S. industry comprises establishments primarily engaged in laminating, lining, or surface coating purchased paperboard to make other paperboard products.

The data published with NAICS code 322226 include the following SIC industry:

2675 Die-cut paper and board (pt)

### **32223 Stationery Product Manufacturing**

This industry comprises establishments primarily engaged in converting paper or paperboard into products used for writing, filing, art work, and similar applications.

### **322231 Die-Cut Paper and Paperboard Office Supplies Manufacturing**

This U.S. industry comprises establishments primarily engaged in converting paper rollstock or paperboard into die-cut paper or paperboard office supplies. For the purpose of this industry, office supplies are defined as office products, such as filing folders, index cards, rolls for adding machines, file separators and dividers, tabulating cards, and other paper and paperboard office supplies.

The data published with NAICS code 322231 include the following SIC industries:

2675 Die-cut paper and board (pt)

2679 Converted paper products, n.e.c. (pt)

### **322232 Envelope Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing envelopes for mailing or stationery of any material including combinations.

The data published with NAICS code 322232 include the following SIC industry:

2677 Envelopes

### **322233 Stationery, Tablet, and Related Product Manufacturing**

This U.S. industry comprises establishments primarily engaged in converting paper and paperboard into products used for writing and similar applications (e.g., loose-leaf fillers, notebooks, pads, stationery, tablets).

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The data published with NAICS code 322233 include the following SIC industry:

2678 Stationery products

### **32229 Other Converted Paper Product Manufacturing**

This industry comprises establishments primarily engaged in (1) converting paper and paperboard into products (except containers, bags, coated and treated paper and paperboard, and stationery products), or (2) converting pulp into pulp products, such as disposable diapers, or molded pulp egg cartons, food trays, and dishes. Processes used include laminating or lining purchased paper or paperboard.

#### **322291 Sanitary Paper Product Manufacturing**

This U.S. industry comprises establishments primarily engaged in converting purchased sanitary paper stock or wadding into sanitary paper products, such as facial tissues and handkerchiefs, table napkins, toilet paper, towels, disposable diapers, sanitary napkins, and tampons.

The data published with NAICS code 322291 include the following SIC industries:

2676 Sanitary paper products (pt)

3842 Surgical appliances and supplies (pt)

#### **322299 All Other Converted Paper Product Manufacturing**

This U.S. industry comprises establishments primarily engaged in converting paper or paperboard into products (except containers, bags, coated and treated paper, stationery products, and sanitary paper products) or converting pulp into pulp products, such as egg cartons, food trays, and other food containers from molded pulp.

The data published with NAICS code 322299 include the following SIC industries:

2675 Die-cut paper and board (pt)

2679 Converted paper products, n.e.c. (pt)

3999 Manufacturing industries, n.e.c. (pt)

### **323 Printing and Related Support Activities**

Industries in the Printing and Related Support Activities subsector print products, such as newspapers, books, periodicals, business forms, greeting cards, and other materials, and perform support activities, such as book-binding, platemaking services, and data imaging. The support activities included here are an integral part of the printing industry, and a product (a printing plate, a bound book, or a computer disk or file) that is an integral part of the printing industry is almost always provided by these operations.

Processes used in printing include a variety of methods used to transfer an image from a plate, screen, or computer file to some medium, such as paper, plastics, metal, textile articles, or wood. The most prominent of these methods is to transfer the image from a plate or screen to the medium (lithographic, gravure, screen, and flexographic printing). A rapidly growing new technology uses a computer file to directly “drive” the printing mechanism to create the image and new electrostatic and other types of equipment (digital or nonimpact printing).

In contrast to many other classification systems that locate publishing of printed materials in manufacturing, NAICS classifies the publishing of printed products in Subsector 511, Publishing Industries. Though printing and publishing are often carried out by the same enterprise (a newspaper, for example), it is less and less the case that these distinct activities are carried out in the same establishment. When publishing and printing are done in the same establishment, the establishment is classified in Sector 51, Information, in the appropriate NAICS industry even if the receipts for printing exceed those for publishing.

This subsector includes printing on clothing because the production process for that activity is printing, not clothing manufacturing. For instance, the printing of T-shirts is included in this subsector. In contrast, printing on fabric (or grey goods) is not included. This activity is part of the process of finishing the fabric and is included in the NAICS Textile Mills subsector in Industry 31331, Textile and Fabric Finishing Mills.

#### **3231 Printing and Related Support Activities**

This NAICS industry group includes establishments classified in the following NAICS Industries: 32311, Printing; and 32312, Support Activities for Printing.

##### **32311 Printing**

This industry comprises establishments primarily engaged in printing on apparel and textile products, paper, metal, glass, plastics, and other materials, except fabric (grey goods). The printing processes employed include, but are not limited to, lithographic, gravure, screen, flexographic, digital, and letterpress. Establishments in this industry do not manufacture the stock that they print but may perform postprinting activities, such as bending, cutting, or laminating the materials they print, and mailing.

##### **323110 Commercial Lithographic Printing**

This U.S. industry comprises establishments primarily engaged in lithographic (i.e., offset) printing without publishing (except books, grey goods, and manifold business forms). This industry includes establishments engaged in lithographic printing on purchased stock materials, such as stationery, letterhead, invitations, labels, and similar items, on a job order basis.



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The data published with NAICS code 3231 10 include the following SIC industries:

- 2752 Commercial printing, lithographic (pt)
- 2771 Greeting cards (pt)
- 3999 Manufacturing industries, n.e.c. (pt)

### **323111 Commercial Gravure Printing**

This U.S. industry comprises establishments primarily engaged in gravure printing without publishing (except books, grey goods, and manifold business forms). This industry includes establishments engaged in gravure printing on purchased stock materials, such as stationery, letterhead, invitations, labels, and similar items, on a job order basis.

The data published with NAICS code 3231 11 include the following SIC industries:

- 2754 Commercial printing, gravure
- 2771 Greeting cards (pt)
- 3999 Manufacturing industries, n.e.c. (pt)

### **323112 Commercial Flexographic Printing**

This U.S. industry comprises establishments primarily engaged in flexographic printing without publishing (except books, grey goods, and manifold business forms). This industry includes establishments engaged in flexographic printing on purchased stock materials, such as stationery, invitations, labels, and similar items, on a job order basis.

The data published with NAICS code 3231 12 include the following SIC industries:

- 2759 Commercial printing, n.e.c. (pt)
- 2771 Greeting cards (pt)
- 3999 Manufacturing industries, n.e.c. (pt)

### **323113 Commercial Screen Printing**

This U.S. industry comprises establishments primarily engaged in screen printing without publishing (except books, grey goods, and manifold business forms). This industry includes establishments engaged in screen printing on purchased stock materials, such as stationery, invitations, labels, and similar items, on a job order basis. Establishments primarily engaged in printing on apparel and textile products, such as T-shirts, caps, jackets, towels, and napkins, are included in this industry.

The data published with NAICS code 3231 13 include the following SIC industries:

- 2396 Automotive and apparel trimmings (pt)
- 2759 Commercial printing, n.e.c. (pt)
- 2771 Greeting cards (pt)
- 3999 Manufacturing industries, n.e.c. (pt)

### **323114 Quick Printing**

This U.S. industry comprises establishments primarily engaged in traditional printing activities, such as short-run offset printing or prepress services, in combination with providing document photocopying service. Prepress services include receiving documents in electronic format and directly duplicating from the electronic file and formatting, colorizing, and otherwise modifying the original document to improve presentation. These establishments, known as quick printers, generally provide short-run printing and copying with fast turnaround times.

The data published with NAICS code 3231 14 include the following SIC industries:

- 2752 Commercial printing, lithographic (pt)
- 2759 Commercial printing, n.e.c. (pt)

### **323115 Digital Printing**

This U.S. industry comprises establishments primarily engaged in printing graphical materials using digital printing equipment. Establishments known as digital printers typically provide sophisticated prepress services including using scanners to input images and computers to manipulate and format the graphic images prior to printing.

The data published with NAICS code 3231 15 include the following SIC industry:

- 2759 Commercial printing, n.e.c. (pt)

### **323116 Manifold Business Form Printing**

This U.S. industry comprises establishments primarily engaged in printing special forms, including checkbooks, for use in the operation of a business. The forms may be in single and multiple sets, including carbonized, interleaved with carbon, or otherwise processed for multiple reproduction.

The data published with NAICS code 3231 16 include the following SIC industries:

- 2761 Manifold business forms
- 2782 Blankbooks and looseleaf binders (pt)

### **323117 Book Printing**

This U.S. industry comprises establishments primarily engaged in printing or printing and binding books and pamphlets without publishing.

The data published with NAICS code 3231 17 include the following SIC industry:

- 2732 Book printing

### **323118 Blankbook, Looseleaf Binders, and Devices Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing blankbooks, looseleaf devices, and binders. Establishments in this industry may print or print and bind.

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The data published with NAICS code 323118 include the following SIC industry:

2782 Blankbooks and looseleaf binders (pt)

### **323119 Other Commercial Printing**

This U.S. industry comprises establishments primarily engaged in commercial printing (except lithographic, gravure, screen, or flexographic printing) without publishing (except books, grey goods, and manifold business forms). Printing processes included in this industry are letterpress printing and engraving printing. This industry includes establishments engaged in commercial printing on purchased stock materials, such as stationery, invitations, labels, and similar items, on a job order basis.

The data published with NAICS code 323119 include the following SIC industries:

2759 Commercial printing, n.e.c. (pt)

2771 Greeting cards (pt)

3999 Manufacturing industries, n.e.c. (pt)

### **32312 Support Activities for Printing**

This industry comprises establishments primarily engaged in performing prepress (e.g., platemaking, typesetting) and postpress services (e.g., book binding) in support of printing activities.

### **323121 Tradebinding and Related Work**

This U.S. industry comprises establishments primarily engaged in one or more of the following: (1) tradebinding; (2) sample mounting; and (3) postpress services (e.g., book or paper bronzing, die-cutting, edging, embossing, folding, gilding, gluing, indexing).

The data published with NAICS code 323121 include the following SIC industry:

2789 Bookbinding and related work

### **323122 Prepress Services**

This U.S. industry comprises (1) establishments primarily engaged in prepress services, such as imagesetting or typesetting, for printers and (2) establishments primarily engaged in preparing film or plates for printing purposes.

The data published with NAICS code 323122 include the following SIC industries:

2791 Typesetting

2796 Platemaking services

## **324 Petroleum and Coal Products Manufacturing**

The Petroleum and Coal Products Manufacturing subsector is based on the transformation of crude petroleum and coal into usable products. The dominant process is

petroleum refining that involves the separation of crude petroleum into component products through such techniques as cracking and distillation.

In addition, this subsector includes establishments that primarily further process refined petroleum and coal products and produce products, such as asphalt coatings and petroleum lubricating oils. However, establishments that manufacture petrochemicals from refined petroleum are classified in Industry 32511, Petrochemical Manufacturing.

## **3241 Petroleum and Coal Products Manufacturing**

This NAICS industry group includes establishments classified in the following NAICS Industries: 32411, Petroleum Refineries; 32412, Asphalt Paving, Roofing, and Saturated Materials Manufacturing; and 32419, Other Petroleum and Coal Products Manufacturing.

### **32411 Petroleum Refineries**

This industry comprises establishments primarily engaged in refining crude petroleum into refined petroleum. Petroleum refining involves one or more of the following activities: (1) fractionation; (2) straight distillation of crude oil; and (3) cracking.

#### **324110 Petroleum Refineries**

This U.S. industry comprises establishments primarily engaged in refining crude petroleum into refined petroleum. Petroleum refining involves one or more of the following activities: (1) fractionation; (2) straight distillation of crude oil; and (3) cracking.

The data published with NAICS code 324110 include the following SIC industry:

2911 Petroleum refining

### **32412 Asphalt Paving, Roofing, and Saturated Materials Manufacturing**

This industry comprises establishments primarily engaged in (1) manufacturing asphalt and tar paving mixtures and blocks and roofing cements and coatings from purchased asphaltic materials and/or (2) saturating purchased mats and felts with asphalt or tar from purchased asphaltic materials.

#### **32412 Asphalt Paving, Roofing, and Saturated Materials Manufacturing**

This industry comprises establishments primarily engaged in (1) manufacturing asphalt and tar paving mixtures and blocks and roofing cements and coatings from purchased asphaltic materials and/or (2) saturating purchased mats and felts with asphalt or tar from purchased asphaltic materials.

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### **324121 Asphalt Paving Mixture and Block Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing asphalt and tar paving mixtures and blocks from purchased asphaltic materials.

The data published with NAICS code 324121 include the following SIC industry:

2951 Asphalt paving mixtures and blocks

### **324122 Asphalt Shingle and Coating Materials Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) saturating purchased mats and felts with asphalt or tar from purchased asphaltic materials and (2) manufacturing asphalt and tar and roofing cements and coatings from purchased asphaltic materials.

The data published with NAICS code 324122 include the following SIC industry:

2952 Asphalt felts and coatings

### **32419 Other Petroleum and Coal Products Manufacturing**

This industry comprises establishments primarily engaged in manufacturing petroleum products (except asphalt paving, roofing, and saturated materials) from refined petroleum or coal products made in coke ovens not integrated with a steel mill.

#### **324191 Petroleum Lubricating Oil and Grease Manufacturing**

This U.S. industry comprises establishments primarily engaged in blending or compounding refined petroleum to make lubricating oils and greases and/or re-refining used petroleum lubricating oils.

The data published with NAICS code 324191 include the following SIC industry:

2992 Lubricating oils and greases

#### **324199 All Other Petroleum and Coal Products Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing petroleum products (except asphalt paving, roofing, and saturated materials and lubricating oils and greases) from refined petroleum and coal products made in coke ovens not integrated with a steel mill.

The data published with NAICS code 324199 include the following SIC industries:

2999 Petroleum and coal products, n.e.c.

3312 Blast furnaces and steel mills (pt)

### **325 Chemical Manufacturing**

The Chemical Manufacturing subsector is based on the transformation of organic and inorganic raw materials by a chemical process and the formulation of products. This subsector distinguishes the production of basic chemicals that comprise the first industry group from the production of intermediate and end products produced by further processing of basic chemicals that make up the remaining industry groups.

This subsector does not include all industries transforming raw materials by a chemical process. It is common for some chemical processing to occur during mining operations. These beneficiating operations, such as copper concentrating, are classified in Sector 21, Mining. Furthermore, the refining of crude petroleum is included in Subsector 324, Petroleum and Coal Products Manufacturing. In addition, the manufacturing of aluminum oxide is included in Subsector 331, Primary Metal Manufacturing; and beverage distilleries are classified in Subsector 312, Beverage and Tobacco Product Manufacturing. As in the case of these two activities, the grouping of industries into subsectors may take into account the association of the activities performed with other activities in the subsector.

#### **3251 Basic Chemical Manufacturing**

This industry group comprises establishments primarily engaged in manufacturing chemicals using basic processes, such as thermal cracking and distillation. Chemicals manufactured in this industry group are usually separate chemical elements or separate chemically-defined compounds.

##### **32511 Petrochemical Manufacturing**

This industry comprises establishments primarily engaged in (1) manufacturing acyclic (i.e., aliphatic) hydrocarbons such as ethylene, propylene, and butylene made from refined petroleum or liquid hydrocarbon and/or (2) manufacturing cyclic aromatic hydrocarbons such as benzene, toluene, styrene, xylene, ethyl benzene, and cumene made from refined petroleum or liquid hydrocarbons.

###### **325110 Petrochemical Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) manufacturing acyclic (i.e., aliphatic) hydrocarbons such as ethylene, propylene, and butylene made from refined petroleum or liquid hydrocarbon and/or (2) manufacturing cyclic aromatic hydrocarbons such as benzene, toluene, styrene, xylene, ethyl benzene, and cumene made from refined petroleum or liquid hydrocarbons.

The data published with NAICS code 325110 include the following SIC industries:

2865 Cyclic crudes and intermediates (pt)

2869 Industrial organic chemicals, n.e.c. (pt)

### **32512 Industrial Gas Manufacturing**

This industry comprises establishments primarily engaged in manufacturing industrial organic and inorganic gases in compressed, liquid, and solid forms.

### **325120 Industrial Gas Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing industrial organic and inorganic gases in compressed, liquid, and solid forms.

The data published with NAICS code 325120 include the following SIC industries:

2813 Industrial gases

2869 Industrial organic chemicals, n.e.c. (pt)

### **32513 Synthetic Dye and Pigment Manufacturing**

This industry comprises establishments primarily engaged in manufacturing synthetic organic and inorganic dyes and pigments, such as lakes and toners (except electrostatic and photographic).

### **325131 Inorganic Dye and Pigment Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing inorganic dyes and pigments.

The data published with NAICS code 325131 include the following SIC industries:

2816 Inorganic pigments (pt)

2819 Industrial inorganic chemicals, n.e.c. (pt)

### **325132 Synthetic Organic Dye and Pigment Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing synthetic organic dyes and pigments, such as lakes and toners (except electrostatic and photographic).

The data published with NAICS code 325132 include the following SIC industry:

2865 Cyclic crudes and intermediates (pt)

### **32518 Other Basic Inorganic Chemical Manufacturing**

This industry comprises establishments primarily engaged in manufacturing basic inorganic chemicals (except industrial gases and synthetic dyes and pigments).

### **325181 Alkalies and Chlorine Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing chlorine, sodium hydroxide (i.e., caustic soda), and other alkalies often using an electrolysis process.

The data published with NAICS code 325181 include the following SIC industry:

2812 Alkalies and chlorine

### **325182 Carbon Black Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing carbon black, bone black, and lamp black.

The data published with NAICS code 325182 include the following SIC industries:

2816 Inorganic pigments (pt)

2895 Carbon black

### **325188 All Other Basic Inorganic Chemical Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing basic inorganic chemicals (except industrial gases, inorganic dyes and pigments, alkalies and chlorine, and carbon black).

The data published with NAICS code 325188 include the following SIC industries:

2819 Industrial inorganic chemicals, n.e.c. (pt)

2869 Industrial organic chemicals, n.e.c. (pt)

### **32519 Other Basic Organic Chemical Manufacturing**

This industry comprises establishments primarily engaged in manufacturing basic organic chemicals (except petrochemicals, industrial gases, and synthetic dyes and pigments).

### **325191 Gum and Wood Chemical Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) distilling wood or gum into products, such as tall oil and wood distillates, and (2) manufacturing wood or gum chemicals, such as naval stores, natural tanning materials, charcoal briquettes, and charcoal (except activated).

The data published with NAICS code 325191 include the following SIC industry:

2861 Gum and wood chemicals

### **325192 Cyclic Crude and Intermediate Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) distilling coal tars and/or (2) manufacturing cyclic crudes or cyclic intermediates (i.e., hydrocarbons, except aromatic petrochemicals) from refined petroleum or natural gas.

The data published with NAICS code 325192 include the following SIC industry:

2865 Cyclic crudes and intermediates (pt)

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### **325193 Ethyl Alcohol Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing nonpotable ethyl alcohol.

The data published with NAICS code 325193 include the following SIC industry:

2869 Industrial organic chemicals, n.e.c. (pt)

### **325199 All Other Basic Organic Chemical Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing basic organic chemical products (except aromatic petrochemicals, industrial gases, synthetic organic dyes and pigments, gum and wood chemicals, cyclic crudes and intermediates, and ethyl alcohol).

The data published with NAICS code 325199 include the following SIC industries:

2869 Industrial organic chemicals, n.e.c. (pt)

2899 Chemical preparations, n.e.c. (pt)

### **3252 Resin, Synthetic Rubber, and Artificial and Synthetic Fibers and Filaments Manufacturing**

#### **32521 Resin and Synthetic Rubber Manufacturing**

This industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing synthetic resins, plastics materials, and nonvulcanizable elastomers and mixing and blending resins on a custom basis; (2) manufacturing noncustomized synthetic resins; and (3) manufacturing synthetic rubber.

#### **325211 Plastics Material and Resin Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) manufacturing resins, plastics materials, and nonvulcanizable thermoplastic elastomers and mixing and blending resins on a custom basis and/or (2) manufacturing noncustomized synthetic resins.

The data published with NAICS code 325211 include the following SIC industry:

2821 Plastics materials and resins

#### **325212 Synthetic Rubber Manufacturing**

This U.S. industry consists of establishments primarily engaged in manufacturing synthetic rubber.

The data published with NAICS code 325212 include the following SIC industry:

2822 Synthetic rubber

### **32522 Artificial and Synthetic Fibers and Filaments Manufacturing**

This industry comprises establishments primarily engaged in (1) manufacturing cellulosic (i.e., rayon and acetate) and noncellulosic (i.e., nylon, polyolefin, and polyester) fibers and filaments in the form of monofilament, filament yarn, staple, or tow or (2) manufacturing and texturing cellulosic and noncellulosic fibers and filaments.

#### **325221 Cellulosic Organic Fiber Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) manufacturing cellulosic (i.e., rayon and acetate) fibers and filaments in the form of monofilament, filament yarn, staple, or tow or (2) manufacturing and texturing cellulosic fibers and filaments.

The data published with NAICS code 325221 include the following SIC industry:

2823 Cellulosic manmade fibers

#### **325222 Noncellulosic Organic Fiber Manufacturing**

This U.S. industry consists of establishments primarily engaged in (1) manufacturing noncellulosic (i.e., nylon, polyolefin, and polyester) fibers and filaments in the form of monofilament, filament yarn, staple, or tow or (2) manufacturing and texturing noncellulosic fibers and filaments.

The data published with NAICS code 325222 include the following SIC industry:

2824 Organic fibers, noncellulosic

### **3253 Pesticide, Fertilizer, and Other Agricultural Chemical Manufacturing**

This NAICS industry group includes establishments classified in the following NAICS Industries: 32531, Fertilizer Manufacturing; and 32532, Pesticide and Other Agricultural Chemical Manufacturing.

#### **32531 Fertilizer Manufacturing**

This industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing nitrogenous or phosphatic fertilizer materials; (2) manufacturing fertilizers from sewage or animal waste; (3) manufacturing nitrogenous or phosphatic materials and mixing with other ingredients into fertilizers; and (4) mixing ingredients made elsewhere into fertilizers.

#### **325311 Nitrogenous Fertilizer Manufacturing**

This U.S. industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing nitrogenous fertilizer materials and mixing ingredients

into fertilizers; (2) manufacturing fertilizers from sewage or animal waste; and (3) manufacturing nitrogenous materials and mixing them into fertilizers.

The data published with NAICS code 325311 include the following SIC industry:

2873 Nitrogenous fertilizers

### **325312 Phosphatic Fertilizer Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) manufacturing phosphatic fertilizer materials or (2) manufacturing phosphatic materials and mixing them into fertilizers.

The data published with NAICS code 325312 include the following SIC industry:

2874 Phosphatic fertilizers

### **325314 Fertilizer (Mixing Only) Manufacturing**

This U.S. industry comprises establishments primarily engaged in mixing ingredients made elsewhere into fertilizers.

The data published with NAICS code 325314 include the following SIC industry:

2875 Fertilizers, mixing only

### **32532 Pesticide and Other Agricultural Chemical Manufacturing**

This industry comprises establishments primarily engaged in the formulation and preparation of agricultural and household pest control chemicals (except fertilizers).

### **325320 Pesticide and Other Agricultural Chemical Manufacturing**

This U.S. industry comprises establishments primarily engaged in the formulation and preparation of agricultural and household pest control chemicals (except fertilizers).

The data published with NAICS code 325320 include the following SIC industry:

2879 Agricultural chemicals, n.e.c.

### **3254 Pharmaceutical and Medicine Manufacturing**

This NAICS industry group includes establishments classified in Industry 32541, Pharmaceutical and Medicine Manufacturing.

### **32541 Pharmaceutical and Medicine Manufacturing**

This industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing biological and medicinal products; (2) processing (i.e., grading, grinding, and milling) botanical drugs and herbs; (3) isolating active medicinal principals from botanical drugs and herbs; and (4) manufacturing pharmaceutical

products intended for internal and external consumption in such forms as ampoules, tablets, capsules, vials, ointments, powders, solutions, and suspensions.

### **325411 Medicinal and Botanical Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) manufacturing uncompounded medicinal chemicals and their derivatives (i.e., generally for use by pharmaceutical preparation manufacturers) and/or (2) grading, grinding, and milling uncompounded botanicals.

The data published with NAICS code 325411 include the following SIC industry:

2833 Medicinals and botanicals

### **325412 Pharmaceutical Preparation Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing in-vivo diagnostic substances and pharmaceutical preparations (except biological) intended for internal and external consumption in dose forms, such as ampoules, tablets, capsules, vials, ointments, powders, solutions, and suspensions.

The data published with NAICS code 325412 include the following SIC industries:

2834 Pharmaceutical preparations

2835 Diagnostic substances (pt)

### **325413 In-Vitro Diagnostic Substance Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing in-vitro (i.e., not taken internally) diagnostic substances, such as chemical, biological, or radioactive substances. The substances are used for diagnostic tests that are performed in test tubes, petri dishes, machines, and other diagnostic test-type devices.

The data published with NAICS code 325413 include the following SIC industry:

2835 Diagnostic substances (pt)

### **325414 Biological Product (Except Diagnostic) Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing vaccines, toxoids, blood fractions, and culture media of plant or animal origin (except diagnostic).

The data published with NAICS code 325414 include the following SIC industry:

2836 Biological products, except diagnostic

### **3255 Paint, Coating, and Adhesive Manufacturing**

This NAICS industry group includes establishments classified in the following NAICS Industries: 32551, Paint and Coating Manufacturing; and 32552, Adhesive Manufacturing.

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### **32551 Paint and Coating Manufacturing**

This industry comprises establishments primarily engaged in (1) mixing pigments, solvents, and binders into paints and other coatings, such as stains, varnishes, lacquers, enamels, shellacs, and water repellent coatings for concrete and masonry, and/or (2) manufacturing allied paint products, such as putties, paint and varnish removers, paint brush cleaners, and frit.

#### **325510 Paint and Coating Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) mixing pigments, solvents, and binders into paints and other coatings, such as stains, varnishes, lacquers, enamels, shellacs, and water repellent coatings for concrete and masonry, and/or (2) manufacturing allied paint products, such as putties, paint and varnish removers, paint brush cleaners, and frit.

The data published with NAICS code 325510 include the following SIC industries:

2851 Paints and allied products

2899 Chemical preparations, n.e.c. (pt)

### **32552 Adhesive Manufacturing**

This industry comprises establishments primarily engaged in manufacturing adhesives, glues, and caulking compounds.

#### **325520 Adhesive Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing adhesives, glues, and caulking compounds.

The data published with NAICS code 325520 include the following SIC industry:

2891 Adhesives and sealants

### **3256 Soap, Cleaning Compound, and Toilet Preparation Manufacturing**

This NAICS industry group includes establishments classified in the following NAICS Industries: 32561, Soap and Cleaning Compound Manufacturing; and 32562, Toilet Preparation Manufacturing.

#### **32561 Soap and Cleaning Compound Manufacturing**

This industry comprises establishments primarily engaged in manufacturing and packaging soap and other cleaning compounds, surface active agents, and textile and leather finishing agents used to reduce tension or speed the drying process.

### **325611 Soap and Other Detergent Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing and packaging soaps and other detergents, such as laundry detergents; dishwashing detergents; toothpaste gels and tooth powders; and natural glycerin.

The data published with NAICS code 325611 include the following SIC industries:

2841 Soap and other detergents

2844 Toilet preparations (pt)

#### **325612 Polish and Other Sanitation Good Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing and packaging polishes and specialty cleaning preparations.

The data published with NAICS code 325612 include the following SIC industry:

2842 Polishes and sanitation goods

#### **325613 Surface Active Agent Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) manufacturing bulk surface active agents for use as wetting agents, emulsifiers, and penetrants, and/or (2) manufacturing textiles and leather finishing agents used to reduce tension or speed the drying process.

The data published with NAICS code 325613 include the following SIC industry:

2843 Surface active agents

#### **32562 Toilet Preparation Manufacturing**

This industry comprises establishments primarily engaged in preparing, blending, compounding, and packaging toilet preparations, such as perfumes, shaving preparations, hair preparations, face creams, lotions (including sunscreens), and other cosmetic preparations.

#### **325620 Toilet Preparation Manufacturing**

This U.S. industry comprises establishments primarily engaged in preparing, blending, compounding, and packaging toilet preparations, such as perfumes, shaving preparations, hair preparations, face creams, lotions (including sunscreens), and other cosmetic preparations.

The data published with NAICS code 325620 include the following SIC industry:

2844 Toilet preparations (pt)

#### **3259 Other Chemical Product Manufacturing**

This industry group comprises establishments primarily engaged in manufacturing chemical products (except basic chemicals; resins, synthetic rubber, cellulosic and

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noncellulosic fibers and filaments; pesticides, fertilizers, and other agricultural chemicals; pharmaceuticals and medicines; paints, coatings, and adhesives; soaps and cleaning compounds; and toilet preparations).

### **32591 Printing Ink Manufacturing**

This industry comprises establishments primarily engaged in manufacturing printing and inkjet inks and inkjet cartridges.

### **325910 Printing Ink Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing printing and inkjet inks and inkjet cartridges.

The data published with NAICS code 325910 include the following SIC industry:

2893 Printing ink

### **32592 Explosives Manufacturing**

This industry comprises establishments primarily engaged in manufacturing explosives.

### **325920 Explosives Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing explosives.

The data published with NAICS code 325920 include the following SIC industry:

2892 Explosives

### **32599 All Other Chemical Product and Preparation Manufacturing**

This industry comprises establishments primarily engaged in manufacturing chemical products (except basic chemicals, resins, and synthetic rubber; cellulosic and noncellulosic fibers and filaments; pesticides, fertilizers, and other agricultural chemicals; pharmaceuticals and medicines; paints, coatings, and adhesives; and soaps, cleaning compounds, and toilet preparations; printing inks; and explosives).

### **325991 Custom Compounding of Purchased Resins**

This U.S. industry comprises establishments primarily engaged in (1) custom mixing and blending plastics resins made elsewhere or (2) reformulating plastics resins from recycled plastics products.

The data published with NAICS code 325991 include the following SIC industries:

3087 Custom compound purchased resins

### **325992 Photographic Film, Paper, Plate, and Chemical Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing sensitized film, sensitized paper, sensitized cloth, sensitized plates, toners (i.e., for photocopiers, laser printers, and similar electrostatic printing devices), toner cartridges, and photographic chemicals.

The data published with NAICS code 325992 include the following SIC industry:

3861 Photographic equipment and supplies (pt)

### **325998 All Other Miscellaneous Chemical Product and Preparation Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing chemical products (except basic chemicals, resins, synthetic rubber; cellulosic and noncellulosic fiber and filaments; pesticides, fertilizers, and other agricultural chemicals; pharmaceuticals and medicines; paints, coatings, and adhesives; soap, cleaning compounds, and toilet preparations; printing inks; explosives; custom compounding of purchased resins; and photographic films, papers, plates, and chemicals).

The data published with NAICS code 325998 include the following SIC industries:

2819 Industrial inorganic chemicals, n.e.c. (pt)

2899 Chemical preparations, n.e.c. (pt)

3952 Lead pencils and art goods (pt)

3999 Manufacturing industries, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 325998 do not include establishments primarily engaged in aerosol packaging. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **326 Plastics and Rubber Products Manufacturing**

Industries in the Plastics and Rubber Products Manufacturing subsector make goods by processing plastics materials and raw rubber. The core technology employed by establishments in this subsector is that of plastics or rubber product production. Plastics and rubber are combined in the same subsector because plastics are increasingly being used as a substitute for rubber; however, the subsector is generally restricted to the production of products made of just one material, either solely plastics or rubber.

Many manufacturing activities use plastics or rubber, for example the manufacture of footwear, or furniture. Typically, the production process of these products



involves more than one material. In these cases, technologies that allow disparate materials to be formed and combined are of central importance in describing the manufacturing activity. In NAICS, such activities (the footwear and furniture manufacturing) are not classified in the Plastics and Rubber Products Manufacturing subsector because the core technologies for these activities are diverse and involve multiple materials.

Within the Plastics and Rubber Products Manufacturing subsector, a distinction is made between plastics and rubber products at the industry group level, although it is not a rigid distinction, as can be seen from the definition of Industry 32622, Rubber and Plastics Hose and Belting Manufacturing. As materials technology progresses, plastics are increasingly being used as a substitute for rubber; and eventually, the distinction may disappear as a basis for establishment classification.

In keeping with the core technology focus of plastics, lamination of plastics film to plastics film as well as the production of bags from plastics only is classified in this subsector. Lamination and bag production involving plastics and materials other than plastics are classified in the NAICS Subsector 322, Paper Manufacturing.

### **3261 Plastics Product Manufacturing**

This industry group comprises establishments primarily engaged in processing new or spent (i.e., recycled) plastics resins into intermediate or final products, using such processes as compression molding; extrusion molding; injection molding; blow molding; and casting. Within most of these industries, the production process is such that a wide variety of products can be made.

#### **32611 Unsupported Plastics Film, Sheet, and Bag Manufacturing**

This industry comprises establishments primarily engaged in (1) converting plastics resins into unsupported plastics film and sheet and/or (2) forming, coating, or laminating plastics film and sheet into plastics bags.

##### **326111 Unsupported Plastics Bag Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) converting plastics resins into plastics bags or (2) forming, coating, or laminating plastics film and sheet into single wall or multiwall plastics bags. Establishments in this industry may print on the bags they manufacture.

The data published with NAICS code 326111 include the following SIC industry:

2673 Bags - plastics, laminated, and coated (pt)

##### **326112 Unsupported Plastics Packaging Film and Sheet Manufacturing**

This U.S. industry comprises establishments primarily engaged in converting plastics resins into plastics packaging (flexible) film and packaging sheet.

The data published with NAICS code 326112 include the following SIC industry:

2671 Paper - coated and laminated, packaging (pt)

##### **326113 Unsupported Plastics Film and Sheet (Except Packaging) Manufacturing**

This U.S. industry comprises establishments primarily engaged in converting plastics resins into plastics film and unlaminated sheet (except packaging).

The data published with NAICS code 326113 include the following SIC industry:

3081 Unsupported plastics film and sheet

##### **32612 Plastics Pipe, Pipe Fitting, and Unsupported Profile Shape Manufacturing**

This industry comprises establishments primarily engaged in manufacturing plastics pipes and pipe fittings, and plastics profile shapes such as rod, tube, and sausage casings.

##### **326121 Unsupported Plastics Profile Shapes Manufacturing**

This U.S. industry comprises establishments primarily engaged in converting plastics resins into nonrigid plastics profile shapes (except film, sheet, and bags), such as rod, tube, and sausage casings.

The data published with NAICS code 326121 include the following SIC industry:

3082 Unsupported plastics profile shapes

##### **326122 Plastics Pipe and Pipe Fitting Manufacturing**

This U.S. industry comprises establishments primarily engaged in converting plastics resins into rigid plastics pipes and pipe fittings.

The data published with NAICS code 326122 include the following SIC industries:

3084 Plastics pipe

3089 Plastics products, n.e.c. (pt)

##### **32613 Laminated Plastics Plate, Sheet, and Shape Manufacturing**

This industry comprises establishments primarily engaged in laminating plastics profile shapes such as plate, sheet (except packaging), and rod. The lamination process generally involves bonding or impregnating profiles with plastics resins and compressing them under heat.

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### **326130 Laminated Plastics Plate, Sheet, and Shape Manufacturing**

This U.S. industry comprises establishments primarily engaged in laminating plastics profile shapes such as plate, sheet (except packaging), and rod. The lamination process generally involves bonding or impregnating profiles with plastics resins and compressing them under heat.

The data published with NAICS code 326130 include the following SIC industry:

3083 Laminated plastics plate and sheet

### **32614 Polystyrene Foam Product Manufacturing**

This industry comprises establishments primarily engaged in manufacturing polystyrene foam products.

### **326140 Polystyrene Foam Product Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing polystyrene foam products.

The data published with NAICS code 326140 include the following SIC industry:

3086 Plastics foam products (pt)

### **32615 Urethane and Other Foam Product (Except Polystyrene) Manufacturing**

This industry comprises establishments primarily engaged in manufacturing plastics foam products (except polystyrene).

### **326150 Urethane and Other Foam Product (Except Polystyrene) Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing plastics foam products (except polystyrene).

The data published with NAICS code 326150 include the following SIC industry:

3086 Plastics foam products (pt)

### **32616 Plastics Bottle Manufacturing**

This industry comprises establishments primarily engaged in manufacturing plastics bottles.

### **326160 Plastics Bottle Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing plastics bottles.

The data published with NAICS code 326160 include the following SIC industry:

3085 Plastics bottles

### **32619 Other Plastics Product Manufacturing**

This industry comprises establishments primarily engaged in manufacturing resilient floor covering and other plastics products (except film, sheet, bags, profile shapes, pipes, pipe fittings, laminates, foam products, and bottles).

### **326191 Plastics Plumbing Fixture Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing plastics or fiberglass plumbing fixtures. Examples of products made by these establishments are plastics or fiberglass bathtubs, hot tubs, portable toilets, and shower stalls.

The data published with NAICS code 326191 include the following SIC industry:

3088 Plastics plumbing fixtures

### **326192 Resilient Floor Covering Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing resilient floor coverings for permanent installation.

The data published with NAICS code 326192 include the following SIC industries:

3069 Fabricated rubber products, n.e.c. (pt)

3996 Hard surface floor coverings

### **326199 All Other Plastics Product Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing plastics products (except film, sheet, bags, profile shapes, pipes, pipe fittings, laminates, foam products, bottles, plumbing fixtures, and resilient floor coverings).

The data published with NAICS code 326199 include the following SIC industries:

3089 Plastics products, n.e.c. (pt)

3999 Manufacturing industries, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 326199 include establishments primarily engaged in the manufacture of plastic furniture parts. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **3262 Rubber Product Manufacturing**

This industry group comprises establishments primarily engaged in processing natural and synthetic or reclaimed rubber materials into intermediate or final products using processes such as vulcanizing, cementing, molding, extruding, and lathe-cutting.

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### **32621 Tire Manufacturing**

This industry comprises establishments primarily engaged in manufacturing tires and inner tubes from natural and synthetic rubber and retreading or rebuilding tires.

#### **326211 Tire Manufacturing (Except Retreading)**

This U.S. industry comprises establishments primarily engaged in manufacturing tires and inner tubes from natural and synthetic rubber.

The data published with NAICS code 326211 include the following SIC industry:

3011 Tires and inner tubes

#### **326212 Tire Retreading**

This U.S. industry comprises establishments primarily engaged in retreading, or rebuilding tires.

The data published with NAICS code 326212 include the following SIC industry:

7534 Tire retreading and repair shops (pt)

#### **32622 Rubber and Plastics Hoses and Belting Manufacturing**

This industry comprises establishments primarily engaged in manufacturing rubber hose and/or plastics (reinforced) hose and belting from natural and synthetic rubber and/or plastics resins. Establishments manufacturing garden hoses from purchased hose are included in this industry.

#### **326220 Rubber and Plastics Hoses and Belting Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing rubber hose and/or plastics (reinforced) hose and belting from natural and synthetic rubber and/or plastics resins. Establishments manufacturing garden hoses from purchased hose are included in this industry.

The data published with NAICS code 326220 include the following SIC industry:

3052 Rubber and plastics hose and belting

#### **32629 Other Rubber Product Manufacturing**

This industry comprises establishments primarily engaged in manufacturing rubber products (except tires, hoses, and belting) from natural and synthetic rubber.

#### **326291 Rubber Product Manufacturing for Mechanical Use**

This U.S. industry comprises establishments primarily engaged in molding, extruding, or lathe-cutting rubber to manufacture rubber goods (except tubing) for mechanical applications. Products of this industry are generally parts for motor vehicles, machinery, and equipment.

The data published with NAICS code 326291 include the following SIC industry:

3061 Mechanical rubber goods

#### **326299 All Other Rubber Product Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing rubber products (except tires; hoses and belting; and molded, extruded, and lathe-cut rubber goods for mechanical applications) from natural and synthetic rubber.

The data published with NAICS code 326299 include the following SIC industry:

3069 Fabricated rubber products, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 326299 include establishments primarily engaged in the manufacture of rubber products including gloves, toys, pants, raincoats, bibs, aprons, bathing caps, life jackets, and wet suits. The NAICS definitions will be fully implemented with the 2002 Economic Census.

#### **327 Nonmetallic Mineral Product Manufacturing**

The Nonmetallic Mineral Product Manufacturing subsector transforms mined or quarried nonmetallic minerals, such as sand, gravel, stone, clay, and refractory materials, into products for intermediate or final consumption. Processes used include grinding, mixing, cutting, shaping, and honing. Heat often is used in the process and chemicals are frequently mixed to change the composition, purity, and chemical properties for the intended product. For example, glass is produced by heating silica sand to the melting point (sometimes combined with cullet or recycled glass) and then drawn, floated, or blow molded to the desired shape or thickness. Refractory materials are heated and then formed into bricks or other shapes for use in industrial applications.

The Nonmetallic Mineral Product Manufacturing subsector includes establishments that manufacture products, such as bricks, refractories, ceramic products, and glass and glass products, such as plate glass and containers. Also included are cement and concrete products, lime, gypsum and other nonmetallic mineral products including abrasive products, ceramic plumbing fixtures, statuary, cut stone products, and mineral wool. The products are used in a wide range of activities from construction and heavy and light manufacturing to articles for personal use.

Mining, beneficiating, and manufacturing activities often occur in a single location. Separate receipts will be collected for these activities whenever possible. When receipts cannot be broken out between mining and manufacturing, establishments that mine or quarry nonmetallic minerals, beneficiate the nonmetallic minerals and further

process the nonmetallic minerals into a more finished manufactured product are classified based on the primary activity of the establishment. A mine that manufactures a small amount of finished products will be classified in Sector 21, Mining. An establishment that mines whose primary output is a more-finished manufactured product will be classified in the Manufacturing Sector.

Excluded from the Nonmetallic Mineral Product Manufacturing subsector are establishments that primarily benefit mined nonmetallic minerals. Beneficiation is the process whereby the extracted material is reduced to particles that can be separated into mineral and waste, the former suitable for further processing or direct use. Beneficiation establishments are included in Sector 21, Mining.

### **3271 Clay Product and Refractory Manufacturing**

This NAICS industry group includes establishments classified in the following NAICS Industries: 32711, Pottery, Ceramics, and Plumbing Fixture Manufacturing; and 32712, Clay Building Material and Refractories Manufacturing.

#### **32711 Pottery, Ceramics, and Plumbing Fixture Manufacturing**

This industry comprises establishments primarily engaged in shaping, molding, glazing, and firing pottery, ceramics, and plumbing fixtures made entirely or partly of clay or other ceramic materials.

#### **327111 Vitreous China Plumbing Fixture and China and Earthenware Bathroom Accessories Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing vitreous china plumbing fixtures and china and earthenware bathroom accessories, such as faucet handles, towel bars, and soap dishes.

The data published with NAICS code 327111 include the following SIC industry:

3261 Vitreous plumbing fixtures

#### **327112 Vitreous China, Fine Earthenware, and Other Pottery Product Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing table and kitchen articles, art and ornamental items, and similar vitreous china, fine earthenware, stoneware, coarse earthenware, and pottery products.

The data published with NAICS code 327112 include the following SIC industries:

3262 Vitreous china table and kitchen articles

3263 Fine earthenware table and kitchen articles

3269 Pottery products, n.e.c.

3299 Nonmetallic mineral products, n.e.c. (pt)

### **327113 Porcelain Electrical Supply Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing porcelain electrical insulators, molded porcelain parts for electrical devices, ferrite or ceramic magnets, and electronic and electrical supplies from nonmetallic minerals, such as clay and ceramic materials.

The data published with NAICS code 327113 include the following SIC industry:

3264 Porcelain electrical supplies

### **32712 Clay Building Material and Refractories Manufacturing**

This industry comprises establishments primarily engaged in shaping, molding, baking, burning, or hardening clay refractories, nonclay refractories, ceramic tile, structural clay tile, brick, and other structural clay building materials.

#### **327121 Brick and Structural Clay Tile Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing brick and structural clay tiles.

The data published with NAICS code 327121 include the following SIC industry:

3251 Brick and structural clay tile

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 327121 include establishments primarily engaged in the manufacture of slumped brick. The NAICS definitions will be fully implemented with the 2002 Economic Census.

#### **327122 Ceramic Wall and Floor Tile Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing ceramic wall and floor tiles.

The data published with NAICS code 327122 include the following SIC industry:

3253 Ceramic wall and floor tile

#### **327123 Other Structural Clay Product Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing clay sewer pipe, drain tile, flue lining tile, architectural terra-cotta, and other structural clay products.

The data published with NAICS code 327123 include the following SIC industry:

3259 Structural clay products, n.e.c.

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### **327124 Clay Refractory Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing clay refractory, mortar, brick, block, tile, and fabricated clay refractories, such as melting pots. A refractory is a material that will retain its shape and chemical identity when subjected to high temperatures and is used in applications that require extreme resistance to heat, such as furnace linings.

The data published with NAICS code 327124 include the following SIC industry:

3255 Clay refractories

### **327125 Nonclay Refractory Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing nonclay refractory, mortar, brick, block, tile, and fabricated nonclay refractories such as graphite, magnesite, silica, or alumina crucibles. A refractory is a material that will retain its shape and chemical identity when subjected to high temperatures and is used in applications that require extreme resistance to heat, such as furnace linings.

The data published with NAICS code 327125 include the following SIC industry:

3297 Nonclay refractories

### **3272 Glass and Glass Product Manufacturing**

This NAICS industry group includes establishments classified in NAICS Industry 32721, Glass and Glass Product Manufacturing.

#### **32721 Glass and Glass Product Manufacturing**

This industry comprises establishments primarily engaged in manufacturing glass and/or glass products. Establishments in this industry may manufacture glass and/or glass products by melting silica sand or cullet, or purchasing glass.

#### **327211 Flat Glass Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) manufacturing flat glass by melting silica sand or cullet or (2) manufacturing both flat glass and laminated glass by melting silica sand or cullet.

The data published with NAICS code 327211 include the following SIC industry:

3211 Flat glass

#### **327212 Other Pressed and Blown Glass and Glassware Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing glass by melting silica sand or cullet and making pressed, blown, or shaped glass or glassware (except glass packaging containers).

The data published with NAICS code 327212 include the following SIC industry:

3229 Pressed and blown glass, n.e.c.

### **327213 Glass Container Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing glass packaging containers.

The data published with NAICS code 327213 include the following SIC industry:

3221 Glass containers

### **327215 Glass Product Manufacturing Made of Purchased Glass**

This U.S. industry comprises establishments primarily engaged in remelting, pressing, blowing, or shaping purchased glass.

The data published with NAICS code 327215 include the following SIC industry:

3231 Products of purchased glass

### **3273 Cement and Concrete Product Manufacturing**

This NAICS industry group includes establishments classified in the following NAICS Industries: 32731, Cement Manufacturing; 32732, Ready-Mix Concrete Manufacturing; 32733, Concrete Pipe, Brick, and Block Manufacturing; and 32739, Other Concrete Product Manufacturing.

#### **32731 Cement Manufacturing**

This industry comprises establishments primarily engaged in manufacturing portland, natural, masonry, pozzalanic, and other hydraulic cements. Cement manufacturing establishments may calcine earths or mine, quarry, manufacture, or purchase lime.

#### **327310 Cement Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing portland, natural, masonry, pozzalanic, and other hydraulic cements. Cement manufacturing establishments may calcine earths or mine, quarry, manufacture, or purchase lime.

The data published with NAICS code 327310 include the following SIC industry:

3241 Cement, hydraulic

#### **32732 Ready-Mix Concrete Manufacturing**

This industry comprises establishments, such as batch plants or mix plants, primarily engaged in manufacturing concrete delivered to a purchaser in a plastic and unhardened state. Ready-mix concrete manufacturing establishments may mine, quarry, or purchase sand and gravel.

### **327320 Ready-Mix Concrete Manufacturing**

This U.S. industry comprises establishments, such as batch plants or mix plants, primarily engaged in manufacturing concrete delivered to a purchaser in a plastic and unhardened state. Ready-mix concrete manufacturing establishments may mine, quarry, or purchase sand and gravel.

The data published with NAICS code 327320 include the following SIC industry:

3273 Ready-mixed concrete

### **32733 Concrete Pipe, Brick, and Block Manufacturing**

This industry comprises establishments primarily engaged in manufacturing concrete pipe, brick, and block

#### **327331 Concrete Block and Brick Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing concrete block and brick.

The data published with NAICS code 327331 include the following SIC industry:

3271 Concrete brick and block

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 327331 do not include establishments primarily engaged in the manufacture of slumped brick. The NAICS definitions will be fully implemented with the 2002 Economic Census.

#### **327332 Concrete Pipe Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing concrete pipe.

The data published with NAICS code 327332 include the following SIC industry:

3272 Concrete products, n.e.c. (pt)

#### **32739 Other Concrete Product Manufacturing**

This industry comprises establishments primarily engaged in manufacturing concrete products (except block, brick, and pipe).

#### **327390 Other Concrete Product Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing concrete products (except block, brick, and pipe).

The data published with NAICS code 327390 include the following SIC industry:

3272 Concrete products, n.e.c. (pt)

### **3274 Lime and Gypsum Product Manufacturing**

This NAICS industry group includes establishments classified in the following NAICS Industries: 32741, Lime Manufacturing; and 32742, Gypsum Product Manufacturing.

#### **32741 Lime Manufacturing**

This industry comprises establishments primarily engaged in manufacturing lime from calcitic limestone, dolomitic limestone, or other calcareous materials, such as coral, chalk, and shells. Lime manufacturing establishments may mine, quarry, collect, or purchase the sources of calcium carbonate.

#### **327410 Lime Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing lime from calcitic limestone, dolomitic limestone, or other calcareous materials, such as coral, chalk, and shells. Lime manufacturing establishments may mine, quarry, collect, or purchase the sources of calcium carbonate.

The data published with NAICS code 327410 include the following SIC industry:

3274 Lime

#### **32742 Gypsum Product Manufacturing**

This industry comprises establishments primarily engaged in manufacturing gypsum products such as wall-board, plaster, plasterboard, molding, ornamental moldings, statuary, and architectural plaster work. Gypsum product manufacturing establishments may mine, quarry, or purchase gypsum.

#### **327420 Gypsum Product Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing gypsum products, such as wall-board, plaster, plasterboard, molding, ornamental moldings, statuary, and architectural plaster work. Gypsum product manufacturing establishments may mine, quarry, or purchase gypsum.

The data published with NAICS code 327420 include the following SIC industries:

3275 Gypsum products

3299 Nonmetallic mineral products, n.e.c. (pt)

#### **3279 Other Nonmetallic Mineral Product Manufacturing**

The Other Nonmetallic Mineral Product Manufacturing industry group comprises establishments manufacturing nonmetallic mineral products (except clay products, refractory products, glass products, cement and concrete products, lime, and gypsum products).

### **32791 Abrasive Product Manufacturing**

This industry comprises establishments primarily engaged in manufacturing abrasive grinding wheels of natural or synthetic materials, abrasive-coated products, and other abrasive products

#### **327910 Abrasive Product Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing abrasive grinding wheels of natural or synthetic materials, abrasive-coated products, and other abrasive products.

The data published with NAICS code 327910 include the following SIC industry:

3291 Abrasive products (pt)

### **32799 All Other Nonmetallic Mineral Product Manufacturing**

This industry comprises establishments primarily engaged in manufacturing nonmetallic mineral products (except pottery, ceramics, and plumbing fixtures; clay building materials and refractories; glass and glass products; cement; ready-mix concrete; concrete products; lime; gypsum products; and abrasive products).

#### **327991 Cut Stone and Stone Product Manufacturing**

This U.S. industry comprises establishments primarily engaged in cutting, shaping, and finishing granite, marble, limestone, slate, and other stone for building and miscellaneous uses. Stone product manufacturing establishments may mine, quarry, or purchase stone.

The data published with NAICS code 327991 include the following SIC industry:

3281 Cut stone and stone products

#### **327992 Ground or Treated Mineral and Earth Manufacturing**

This U.S. industry comprises establishments primarily engaged in calcining, dead burning, or otherwise processing beyond beneficiation, clays, ceramic and refractory minerals, barite, and miscellaneous nonmetallic minerals.

The data published with NAICS code 327992 include the following SIC industry:

3295 Minerals, ground or treated

#### **327993 Mineral Wool Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing mineral wool and mineral wool (i.e., fiberglass) insulation products made of such siliceous materials as rock, slag, and glass or combinations thereof.

The data published with NAICS code 327993 include the following SIC industry:

3296 Mineral wool

### **327999 All Other Miscellaneous Nonmetallic Mineral Product Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing nonmetallic mineral products (except pottery, ceramics, and plumbing fixtures; clay building materials and refractories; glass and glass products; cement; ready-mix concrete; concrete products; lime; gypsum products; abrasive products; cut stone and stone products; ground and treated minerals and earth; and mineral wool).

The data published with NAICS code 327999 include the following SIC industries:

3272 Concrete products, n.e.c. (pt)

3292 Asbestos products (pt)

3299 Nonmetallic mineral products, n.e.c. (pt)

### **331 Primary Metal Manufacturing**

Industries in the Primary Metal Manufacturing subsector smelt and/or refine ferrous and nonferrous metals from ore, pig or scrap, using electrometallurgical and other process metallurgical techniques. Establishments in this subsector also manufacture metal alloys and superalloys by introducing other chemical elements to pure metals. The output of smelting and refining, usually in ingot form, is used in rolling, drawing, and extruding operations to make sheet, strip, bar, rod, or wire, and in molten form to make castings and other basic metal products.

Primary manufacturing of ferrous and nonferrous metals begins with ore or concentrate as the primary input. Establishments manufacturing primary metals from ore and/or concentrate remain classified in the primary smelting, primary refining, or iron and steel mill, industries regardless of the form of their output. Establishments primarily engaged in secondary smelting and/or secondary refining recover ferrous and nonferrous metals from scrap and/or dross. The output of the secondary smelting and/or secondary refining industries is limited to shapes, such as ingot or billet, that will be further processed. Recovery of metals from scrap often occurs in establishments that are primarily engaged in activities, such as rolling, drawing, extruding, or similar processes.

Excluded from the Primary Metal Manufacturing subsector are establishments primarily engaged in manufacturing ferrous and nonferrous forgings (except ferrous forgings made in steel mills) and stampings. Although forging, stamping, and casting are all methods used to make metal shapes, forging and stamping do not use molten metals and are included in Subsector 332, Fabricated Metal Product Manufacturing. Establishments primarily engaged in operating coke ovens are classified in Industry 32419, Other Petroleum and Coal Products Manufacturing.

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### **3311 Iron and Steel Mills and Ferroalloy Manufacturing**

This NAICS industry group includes establishments classified in NAICS Industry 33111, Iron and Steel Mills and Ferroalloy Manufacturing.

#### **33111 Iron and Steel Mills and Ferroalloy Manufacturing**

This industry comprises establishments primarily engaged in one or more of the following: (1) direct reduction of iron ore; (2) manufacturing pig iron in molten or solid form; (3) converting pig iron into steel; (4) manufacturing ferroalloys; (5) making steel; (6) making steel and manufacturing shapes (e.g., bar, plate, rod, sheet, strip, wire); and (7) making steel and forming pipe and tube.

#### **331111 Iron and Steel Mills**

This U.S. industry comprises establishments primarily engaged in one or more of the following: (1) direct reduction of iron ore; (2) manufacturing pig iron in molten or solid form; (3) converting pig iron into steel; (4) making steel; (5) making steel and manufacturing shapes (e.g., bar, plate, rod, sheet, strip, wire); and (6) making steel and forming tube and pipe.

The data published with NAICS code 331111 include the following SIC industries:

3312 Blast furnaces and steel mills (pt)

3399 Primary metal products, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 331111 include establishments primarily engaged in the manufacture of ferrous metal powder, paste, and flake. The NAICS definitions will be fully implemented with the 2002 Economic Census.

#### **3311111 Iron and Steel Mills – Fully Integrated**

Establishments primarily engaged in smelting iron ore in a blast furnace to produce pig iron in molten or solid form; then converting pig iron into steel by removal of the carbon in the iron through combustion in a basic oxygen or electric furnace; then producing iron and steel basic shapes, such as plates, sheets, strips, and bars, and other related products, such as pipes, tubes, and wire.

#### **3311112 Iron and Steel Mills – Partially Integrated With a Blast Furnace**

Establishments primarily engaged in smelting iron ore in a blast furnace to produce pig iron in molten or solid form; then converting pig iron into steel by removal of the carbon in the iron through combustion in a basic oxygen or electric furnace; then producing ingots and/or semifinished shapes, such as blooms, billets, and rods.

#### **3311113 Iron and Steel Mills – Partially Integrated Without a Blast Furnace**

Establishments primarily engaged in converting pig iron, direct reduced iron, and/or scrap into steel by removal of the carbon in the iron through combustion in a basic oxygen or electric furnace; then producing iron and steel basic shapes, such as plates, sheets, strips, and bars, and other related products, such as pipes, tubes, and wire.

#### **3311114 Iron and Steel Mills – Nonintegrated**

Establishments primarily engaged in producing iron and steel basic shapes, such as plates, sheets, strips, and bars, and other related products, such as pipes, tubes, and wire from purchased ingots and/or semifinished shapes, such as blooms, billets, and rods.

#### **331112 Electrometallurgical Ferroalloy Product Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing electrometallurgical ferroalloys. Ferroalloys add critical elements, such as silicon and manganese for carbon steel and chromium, vanadium, tungsten, titanium, and molybdenum for low- and high-alloy metals. Ferroalloys include iron-rich alloys and more pure forms of elements added during the steel manufacturing process that alter or improve the characteristics of the metal being made.

The data published with NAICS code 331112 include the following SIC industry:

3313 Electrometallurgical products (pt)

#### **3312 Steel Product Manufacturing From Purchased Steel**

This industry group comprises establishments primarily engaged in manufacturing iron and steel tube and pipe, drawing steel wire, and rolling or drawing shapes from purchased iron or steel.

#### **33121 Iron and Steel Pipes and Tubes Manufacturing From Purchased Steel**

This industry comprises establishments primarily engaged in manufacturing welded, riveted, or seamless pipe and tube from purchased iron or steel.

#### **331210 Iron and Steel Pipes and Tubes Manufacturing From Purchased Steel**

This U.S. industry comprises establishments primarily engaged in manufacturing welded, riveted, or seamless pipe and tube from purchased iron or steel.

The data published with NAICS code 331210 include the following SIC industry:

3317 Steel pipe and tubes



### **33122 Rolling and Drawing of Purchased Steel**

This industry comprises establishments primarily engaged in rolling and/or drawing steel shapes, such as plate, sheet, strip, rod, and bar, from purchased steel.

#### **331221 Rolled Steel Shape Manufacturing**

This U.S. industry comprises establishments primarily engaged in rolling or drawing shapes (except wire), such as plate, sheet, strip, rod, and bar, from purchased steel.

The data published with NAICS code 331221 include the following SIC industry:

3316 Cold finishing of steel shapes

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 331221 do not include establishments primarily engaged in making coke oven and blast furnace products; in making steel and rolling or drawing steel shapes; or in the making of ferrous metal powder, paste, and flake. The NAICS definitions will be fully implemented with the 2002 Economic Census.

#### **331222 Steel Wire Drawing**

This U.S. industry comprises establishments primarily engaged in drawing wire from purchased steel.

The data published with NAICS code 331222 include the following SIC industry:

3315 Steel wire and related products (pt)

### **3313 Alumina and Aluminum Production and Processing**

This NAICS industry group includes establishments classified in NAICS Industry 33131, Alumina and Aluminum Production and Processing.

#### **33131 Alumina and Aluminum Production and Processing**

This industry comprises establishments primarily engaged in one or more of the following: (1) refining alumina; (2) making (i.e., the primary production) aluminum from alumina; (3) recovering aluminum from scrap or dross; (4) alloying purchased aluminum; and (5) manufacturing aluminum primary forms (e.g., bar, foil, pipe, plate, rod, sheet, tube, wire).

##### **331311 Alumina Refining**

This U.S. industry comprises establishments primarily engaged in refining alumina (i.e., aluminum oxide) generally from bauxite.

The data published with NAICS code 331311 include the following SIC industry:

2819 Industrial inorganic chemicals, n.e.c. (pt)

### **331312 Primary Aluminum Production**

This U.S. industry comprises establishments primarily engaged in (1) making aluminum from alumina and/or (2) making aluminum from alumina and rolling, drawing, extruding, or casting the aluminum they make into primary forms (e.g., bar, billet, ingot, plate, rod, sheet, strip). Establishments in this industry may make primary aluminum or aluminum-based alloys from alumina.

The data published with NAICS code 331312 include the following SIC industry:

3334 Primary aluminum

#### **331314 Secondary Smelting and Alloying of Aluminum**

This U.S. industry comprises establishments primarily engaged in (1) recovering aluminum and aluminum alloys from scrap and/or dross (i.e., secondary smelting) and making billet or ingot (except by rolling) and/or (2) manufacturing alloys, powder, paste, or flake from purchased aluminum.

The data published with NAICS code 331314 include the following SIC industries:

3341 Secondary nonferrous metals (pt)

3399 Primary metal products, n.e.c. (pt)

#### **331315 Aluminum Sheet, Plate, and Foil Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) flat rolling or continuous casting sheet, plate, foil, and welded tube from purchased aluminum and/or (2) recovering aluminum from scrap and flat rolling or continuous casting sheet, plate, foil, and welded tube in integrated mills.

The data published with NAICS code 331315 include the following SIC industry:

3353 Aluminum sheet, plate, and foil (pt)

#### **331316 Aluminum Extruded Product Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) extruding aluminum bar, pipe, and tube blooms or extruding or drawing tube from purchased aluminum; and/or (2) recovering aluminum from scrap and extruding bar, pipe, and tube blooms or drawing tube in integrated mills.

The data published with NAICS code 331316 include the following SIC industry:

3354 Aluminum extruded products

### **331319 Other Aluminum Rolling and Drawing**

This U.S. industry comprises establishments primarily engaged in (1) rolling, drawing, or extruding shapes (except flat rolled sheet, plate, foil, and welded tube; extruded rod, bar, pipe, and tube blooms; and drawn or extruded tube) from purchased aluminum and/or (2) recovering aluminum from scrap and rolling, drawing or extruding shapes (except flat rolled sheet, plate, foil, and welded tube; extruded rod, bar, pipe, and tube blooms; and drawn or extruded tube) in integrated mills.

The data published with NAICS code 331319 include the following SIC industries:

3355 Aluminum rolling and drawing, n.e.c.

3357 Nonferrous wire drawing and insulating (pt)

### **3314 Nonferrous Metal (Except Aluminum) Production and Processing**

This NAICS industry group includes establishments classified in the following NAICS Industries: 33141, Nonferrous Metal (Except Aluminum) Smelting and Refining; 33142, Copper Rolling, Drawing, Extruding, and Alloying; and 33149, Nonferrous Metal (Except Copper and Aluminum) Rolling, Drawing, Extruding, and Alloying.

#### **33141 Nonferrous Metal (Except Aluminum) Smelting and Refining**

This industry comprises establishments primarily engaged in (1) smelting ores into nonferrous metals and/or (2) the primary refining of nonferrous metals (except aluminum) using electrolytic or other processes.

#### **331411 Primary Smelting and Refining of Copper**

This U.S. industry comprises establishments primarily engaged in (1) smelting copper ore and/or (2) the primary refining of copper by electrolytic methods or other processes. Establishments in this industry make primary copper and copper-based alloys, such as brass and bronze, from ore or concentrates.

The data published with NAICS code 331411 include the following SIC industry:

3331 Primary copper

#### **331419 Primary Smelting and Refining of Nonferrous Metal (Except Copper and Aluminum)**

This U.S. industry comprises establishments primarily engaged in (1) making (i.e., the primary production) nonferrous metals by smelting ore and/or (2) the primary refining of nonferrous metals by electrolytic methods or other processes.

The data published with NAICS code 331419 include the following SIC industry:

3339 Primary nonferrous metals, n.e.c.

### **33142 Copper Rolling, Drawing, Extruding, and Alloying**

This industry comprises establishments primarily engaged in one or more of the following: (1) recovering copper or copper alloys from scraps; (2) alloying purchased copper; (3) rolling, drawing, or extruding shapes, (e.g., bar, plate, sheet, strip, tube, and wire) from purchased copper; and (4) recovering copper or copper alloys from scrap and rolling drawing, or extruding shapes (e.g., bar, plate, sheet, strip, tube, and wire).

#### **331421 Copper Rolling, Drawing, and Extruding**

This U.S. industry comprises establishments primarily engaged in (1) rolling, drawing, and/or extruding shapes (e.g., bar, plate, sheet, strip, tube (except bare or insulated copper communication or energy wire)) from purchased copper; and/or (2) recovering copper from scrap and rolling, drawing, and/or extruding shapes (e.g., bar, plate, sheet, strip, tube (except bare or insulated copper communication or energy wire in integrated mills)).

The data published with NAICS code 331421 include the following SIC industry:

3351 Copper rolling and drawing

#### **331422 Copper Wire (Except Mechanical) Drawing**

This U.S. industry comprises establishments primarily engaged in drawing or drawing and insulating communication and energy wire and cable from purchased copper or in integrated secondary smelting and wire drawing plants.

The data published with NAICS code 331422 include the following SIC industry:

3357 Nonferrous wire drawing and insulating (pt)

#### **331423 Secondary Smelting, Refining, and Alloying of Copper**

This U.S. industry comprises establishments primarily engaged in (1) recovering copper and copper alloys from scrap and/or (2) alloying purchased copper. Establishments in this industry make primary forms, such as ingot, wire bar, cake, and slab from copper or copper alloys, such as brass and bronze.

The data published with NAICS code 331423 include the following SIC industries:

3341 Secondary nonferrous metals (pt)

3399 Primary metal products, n.e.c. (pt)

### **33149 Nonferrous Metal (Except Copper and Aluminum) Rolling, Drawing, Extruding, and Alloying**

This industry comprises establishments primarily engaged in one or more of the following: (1) recovering nonferrous metals (except copper and aluminum) and nonferrous metal alloys from scrap; (2) alloying purchased

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nonferrous metals (except copper and aluminum); (3) rolling, drawing, and extruding shapes from purchased nonferrous metals (except copper and aluminum); and (4) recovering nonferrous metals from scrap (except copper and aluminum) and rolling, drawing, or extruding shapes in integrated facilities.

### **331491 Nonferrous Metal (Except Copper and Aluminum) Rolling, Drawing, and Extruding**

This U.S. industry comprises establishments primarily engaged in (1) rolling, drawing, or extruding shapes (e.g., bar, plate, sheet, strip, tube) from purchased nonferrous metals) and/or (2) recovering nonferrous metals from scrap and rolling, drawing, and/or extruding shapes (e.g., bar, plate, sheet, strip, tube) in integrated mills.

The data published with NAICS code 331491 include the following SIC industries:

3356 Nonferrous rolling and drawing, n.e.c.

3357 Nonferrous wire drawing and insulating (pt)

### **331492 Secondary Smelting, Refining, and Alloying of Nonferrous Metal (Except Copper and Aluminum)**

This U.S. industry comprises establishments primarily engaged in (1) alloying purchased nonferrous metals and/or (2) recovering nonferrous metals from scrap. Establishments in this industry make primary forms (e.g., bar, billet, bloom, cake, ingot, slab, slug, wire) using smelting or refining processes.

The data published with NAICS code 331492 include the following SIC industries:

3313 Electrometallurgical products (pt)

3341 Secondary nonferrous metals (pt)

3399 Primary metal products, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 331492 include establishments primarily engaged in the manufacture of other nonferrous additive alloys. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **3315 Foundries**

This industry group comprises establishments primarily engaged in pouring molten metal into molds or dies to form castings. Establishments making castings and further manufacturing, such as machining or assembling, a specific manufactured product are classified in the industry of the finished product. Foundries may perform operations, such as cleaning and deburring, on the castings they manufacture. More involved processes, such as tapping,

threading, milling, or machining to tight tolerances, that transform castings into more finished products are classified elsewhere in the manufacturing sector based on the product being made.

Establishments in this industry group make castings from purchased metals or in integrated secondary smelting and casting facilities. When the production of primary metals is combined with making castings, the establishment is classified in 331 with the primary metal being made.

### **33151 Ferrous Metal Foundries**

This industry comprises establishments primarily engaged in pouring molten iron and steel into molds of a desired shape to make castings. Establishments in this industry purchase iron and steel made in other establishments.

#### **331511 Iron Foundries**

This U.S. industry comprises establishments primarily engaged in pouring molten pig iron or iron alloys into molds to manufacture castings, (e.g., cast iron man-hole covers, cast iron pipe, cast iron skillets). Establishments in this industry purchase iron made in other establishments.

The data published with NAICS code 331511 include the following SIC industries:

3321 Gray iron foundries

3322 Malleable iron foundries

#### **331512 Steel Investment Foundries**

This U.S. industry comprises establishments primarily engaged in manufacturing steel investment castings. Investment molds are formed by covering a wax shape with a refractory slurry. After the refractory slurry hardens, the wax is melted, leaving a seamless mold. Investment molds provide highly detailed, consistent castings. Establishments in this industry purchase steel made in other establishments.

The data published with NAICS code 331512 include the following SIC industry:

3324 Steel investment foundries

#### **331513 Steel Foundries (Except Investment)**

This U.S. industry comprises establishments primarily engaged in manufacturing steel castings (except steel investment castings). Establishments in this industry purchase steel made in other establishments.

The data published with NAICS code 331513 include the following SIC industry:

3325 Steel foundries, n.e.c.

### **33152 Nonferrous Metal Foundries**

This industry comprises establishments primarily engaged in pouring and/or introducing molten nonferrous metal, under high pressure, into metal molds or dies to manufacture castings. Establishments in this industry purchase nonferrous metals made in other establishments.

#### **331521 Aluminum Die-Casting Foundries**

This U.S. industry comprises establishments primarily engaged in introducing molten aluminum, under high pressure, into molds or dies to make aluminum die-castings. Establishments in this industry purchase aluminum made in other establishments.

The data published with NAICS code 331521 include the following SIC industry:

3363 Aluminum die-castings

#### **331522 Nonferrous (Except Aluminum) Die-Casting Foundries**

This U.S. industry comprises establishments primarily engaged in introducing molten nonferrous metal (except aluminum), under high pressure, into molds to make nonferrous metal die-castings. Establishments in this industry purchase nonferrous metals made in other establishments.

The data published with NAICS code 331522 include the following SIC industry:

3364 Nonferrous die-casting, except aluminum

#### **331524 Aluminum Foundries (Except Die-Casting)**

This U.S. industry comprises establishments primarily engaged in pouring molten aluminum into molds to manufacture aluminum castings. Establishments in this industry purchase aluminum made in other establishments.

The data published with NAICS code 331524 include the following SIC industry:

3365 Aluminum foundries

#### **331525 Copper Foundries (Except Die-Casting)**

This U.S. industry comprises establishments primarily engaged in pouring molten copper into molds to manufacture copper castings. Establishments in this industry purchase copper made in other establishments.

The data published with NAICS code 331525 include the following SIC industry:

3366 Copper foundries

#### **331528 Other Nonferrous Foundries (Except Die-Casting)**

This U.S. industry comprises establishments primarily engaged in pouring molten nonferrous metals (except aluminum and copper) into molds to manufacture nonferrous castings (except aluminum die-castings, nonferrous

(except aluminum) die-castings, aluminum castings, and copper castings). Establishments in this industry purchase nonferrous metals, such as nickel, lead, and zinc, made in other establishments.

The data published with NAICS code 331528 include the following SIC industry:

3369 Nonferrous foundries, n.e.c.

### **332 Fabricated Metal Product Manufacturing**

Industries in the Fabricated Metal Product Manufacturing subsector transform metal into intermediate or end products, other than machinery, computers and electronics, and metal furniture or treating metals and metal formed products fabricated elsewhere. Important fabricated metal processes are forging, stamping, bending, forming, and machining, used to shape individual pieces of metal; and other processes, such as welding and assembling, used to join separate parts together. Establishments in this subsector may use one of these processes or a combination of these processes.

The NAICS structure for this subsector distinguishes the forging and stamping processes in a single industry. The remaining industries, in the subsector, group establishments based on similar combinations of processes used to make products.

The manufacturing performed in the Fabricated Metal Product Manufacturing subsector begins with manufactured metal shapes. The establishments in this sector further fabricate the purchased metal shapes into a product. For instance, the Spring and Wire Product Manufacturing industry starts with wire and fabricates such items.

Within manufacturing there are other establishments that make the same products made by this subsector; only these establishments begin production further back in the production process. These establishments have a more integrated operation. For instance, one establishment may manufacture steel, draw it into wire, and make wire products in the same establishment. Such operations are classified in the Primary Metal Manufacturing subsector.

#### **3321 Forging and Stamping**

This NAICS industry group includes establishments classified in NAICS Industry 33211, Forging and Stamping.

##### **33211 Forging and Stamping**

This industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing forgings from purchased metals; (2) manufacturing metal custom roll forming products; (3) manufacturing metal stamped and spun products (except automotive, cans, coins); and (4) manufacturing powder metallurgy products. Establishments making metal forgings, metal stampings, and metal spun products and further manufacturing (e.g., machining, assembling) a specific manufactured product are classified in the industry of the finished

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product. Metal forging, metal stamping, and metal spun products establishments may perform surface finishing operations, such as cleaning and deburring, on the products they manufacture.

### **332111 Iron and Steel Forging**

This U.S. industry comprises establishments primarily engaged in manufacturing iron and steel forgings from purchased iron and steel by hammering mill shapes. Establishments making iron and steel forgings and further manufacturing (e.g., machining, assembling) a specific manufactured product are classified in the industry of the finished product. Iron and steel forging establishments may perform surface finishing operations, such as cleaning and deburring, on the forgings they manufacture.

The data published with NAICS code 332111 include the following SIC industry:

3462 Iron and steel forgings

### **332112 Nonferrous Forging**

This U.S. industry comprises establishments primarily engaged in manufacturing nonferrous forgings from purchased nonferrous metals by hammering mill shapes. Establishments making nonferrous forgings and further manufacturing (e.g., machining, assembling) a specific manufactured product are classified in the industry of the finished product. Nonferrous forging establishments may perform surface finishing operations, such as cleaning and deburring, on the forgings they manufacture.

The data published with NAICS code 332112 include the following SIC industry:

3463 Nonferrous forgings

### **332114 Custom Roll Forming**

This U.S. industry comprises establishments primarily engaged in custom roll forming metal products by use of rotary motion of rolls with various contours to bend or shape the products.

The data published with NAICS code 332114 include the following SIC industry:

3449 Miscellaneous metal work (pt)

### **332115 Crown and Closure Manufacturing**

This U.S. industry comprises establishments primarily engaged in stamping metal crowns and closures, such as bottle caps and home canning lids and rings.

The data published with NAICS code 332115 include the following SIC industry:

3466 Crowns and closures

### **332116 Metal Stamping**

This U.S. industry comprises establishments primarily engaged in manufacturing unfinished metal stampings and spinning unfinished metal products (except crowns, cans, closures, automotive, and coins). Establishments making metal stampings and metal spun products and further manufacturing (e.g., machining, assembling) a specific product are classified in the industry of the finished product. Metal stamping and metal spun products establishments may perform surface finishing operations, such as cleaning and deburring, on the products they manufacture.

The data published with NAICS code 332116 include the following SIC industry:

3469 Metal stampings, n.e.c. (pt)

### **332117 Powder Metallurgy Parts Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing powder metallurgy products by compacting them in a shaped die and sintering. Establishments in this industry generally make a wide range of parts on a job or order basis.

The data published with NAICS code 332117 include the following SIC industry:

3499 Fabricated metal products, n.e.c. (pt)

### **3322 Cutlery and Handtool Manufacturing**

This NAICS industry group includes establishments classified in NAICS Industry 33221, Cutlery and Handtool Manufacturing.

#### **33221 Cutlery and Handtool Manufacturing**

This industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing nonprecious and precious plated metal cutlery and flatware; (2) manufacturing nonpowered hand and edge tools; (3) manufacturing nonpowered handsaws; (4) manufacturing saw blades, all types (including those for sawing machines); and (5) manufacturing metal kitchen utensils (except cutting-type) and pots and pans (except those manufactured by casting (e.g., cast iron skillet) or stamped without further fabrication).

#### **332211 Cutlery and Flatware (Except Precious) Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing nonprecious and precious plated metal cutlery and flatware.

The data published with NAICS code 332211 include the following SIC industries:

3421 Cutlery

3914 Silverware and plated ware (pt)

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This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census–Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 332211 do not include establishments primarily engaged in the manufacture of hand-operated clippers for human hair. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **332212 Hand and Edge Tool Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing nonpowered hand and edge tools (except saws).

The data published with NAICS code 332212 include the following SIC industries:

- 3423 Hand and edge tools, n.e.c.
- 3523 Farm machinery and equipment (pt)
- 3524 Lawn and garden equipment (pt)
- 3545 Machine tool accessories (pt)
- 3699 Electrical equipment and supplies, n.e.c. (pt)
- 3799 Transportation equipment, n.e.c. (pt)
- 3999 Manufacturing industries, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 332212 include establishments primarily engaged in the manufacture of wheelbarrows or quality control laser equipment but do not include establishments primarily engaged in the manufacture of tool-type shears or fish wire, an electrical wiring tool. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **332213 Saw Blade and Handsaw Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) manufacturing nonpowered handsaws and/or (2) manufacturing saw blades, all types (including those for power sawing machines).

The data published with NAICS code 332213 include the following SIC industry:

- 3425 Saw blades and handsaws

### **332214 Kitchen Utensil, Pot, and Pan Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing metal kitchen utensils (except cutting-type), pots, and pans (except those manufactured by casting (e.g., cast iron skillets) or stamped without further fabrication).

The data published with NAICS code 332214 include the following SIC industry:

- 3469 Metal stampings, n.e.c. (pt)

### **3323 Architectural and Structural Metals Manufacturing**

This NAICS industry group includes establishments classified in the following NAICS Industries: 33231, Plate Work and Fabricated Structural Product Manufacturing; and 33232, Ornamental and Architectural Metal Products Manufacturing.

#### **33231 Plate Work and Fabricated Structural Product Manufacturing**

This industry comprises establishments primarily engaged in manufacturing one or more of the following: (1) prefabricated metal buildings, panels, and sections; (2) structural metal products; and (3) metal plate work products.

##### **332311 Prefabricated Metal Building and Component Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing prefabricated metal buildings, panels, and sections.

The data published with NAICS code 332311 include the following SIC industry:

- 3448 Prefabricated metal buildings

##### **332312 Fabricated Structural Metal Manufacturing**

This U.S. industry comprises establishments primarily engaged in fabricating structural metal products, such as concrete reinforcing bars and fabricated bar joists.

The data published with NAICS code 332312 include the following SIC industries:

- 3441 Fabricated structural metal
- 3449 Miscellaneous metal work (pt)

##### **332313 Plate Work Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing fabricated metal plate work by cutting, punching, bending, shaping, and welding purchased metal plate.

The data published with NAICS code 332313 include the following SIC industry:

- 3443 Fabricated plate work, boiler shops (pt)

##### **33232 Ornamental and Architectural Metal Products Manufacturing**

This industry comprises establishments primarily engaged in manufacturing one or more of the following: (1) metal framed windows (i.e., typically using purchased glass) and metal doors; (2) sheet metal work; and (3) ornamental and architectural metal products.

### **332321 Metal Window and Door Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing metal framed windows (i.e., typically using purchased glass) and metal doors. Examples of products made by these establishments are metal door frames; metal framed window and door screens; metal molding and trim (except automotive); and metal curtain walls.

The data published with NAICS code 332321 include the following SIC industries:

- 2499 Wood products, n.e.c. (pt)
- 3442 Metal doors, sash, and trim
- 3449 Miscellaneous metal work (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 332321 include establishments primarily engaged in the manufacture of metal finished moldings for mirrors and pictures. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **332322 Sheet Metal Work Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing sheet metal work (except stampings).

The data published with NAICS code 332322 include the following SIC industry:

- 3444 Sheet metal work (pt)

### **332323 Ornamental and Architectural Metal Work Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing ornamental and architectural metal work, such as staircases, metal open steel flooring, fire escapes, railings, and scaffolding.

The data published with NAICS code 332323 include the following SIC industries:

- 3446 Architectural metal work
- 3449 Miscellaneous metal work (pt)
- 3523 Farm machinery and equipment (pt)

### **3324 Boiler, Tank, and Shipping Container Manufacturing**

This NAICS industry group includes establishments classified in the following NAICS Industries: 33241, Power Boiler and Heat Exchanger Manufacturing; 33242, Metal Tank (Heavy Gauge) Manufacturing; and 33243, Metal Can, Box, and Other Metal Container (Light Gauge) Manufacturing.

### **33241 Power Boiler and Heat Exchanger Manufacturing**

This industry comprises establishments primarily engaged in manufacturing power boilers and heat exchangers. Establishments in this industry may perform installation in addition to manufacturing power boilers and heat exchangers.

### **332410 Power Boiler and Heat Exchanger Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing power boilers and heat exchangers. Establishments in this industry may perform installation in addition to manufacturing power boilers and heat exchangers.

The data published with NAICS code 332410 include the following SIC industry:

- 3443 Fabricated plate work, boiler shops (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 332410 do not include establishments primarily engaged in the manufacture of nuclear control drive mechanisms. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **33242 Metal Tank (Heavy Gauge) Manufacturing**

This industry comprises establishments primarily engaged in cutting, forming, and joining heavy gauge metal to manufacture tanks, vessels, and other containers.

### **332420 Metal Tank (Heavy Gauge) Manufacturing**

This U.S. industry comprises establishments primarily engaged in cutting, forming, and joining heavy gauge metal to manufacture tanks, vessels, and other containers.

The data published with NAICS code 332420 include the following SIC industry:

- 3443 Fabricated plate work, boiler shops (pt)

### **33243 Metal Can, Box, and Other Metal Container (Light Gauge) Manufacturing**

This industry comprises establishments primarily engaged in forming light gauge metal containers.

### **332431 Metal Can Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing metal cans, lids, and ends.

The data published with NAICS code 332431 include the following SIC industry:

- 3411 Metal cans

### **332439 Other Metal Container Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing metal (light gauge) containers (except cans).

The data published with NAICS code 332439 include the following SIC industries:

- 3412 Metal barrels, drums, and pails
- 3429 Hardware, n.e.c. (pt)
- 3444 Sheet metal work (pt)
- 3499 Fabricated metal products, n.e.c. (pt)
- 3537 Industrial trucks and tractors (pt)

### **3325 Hardware Manufacturing**

This NAICS industry group includes establishments classified in NAICS Industry 33251, Hardware Manufacturing.

#### **33251 Hardware Manufacturing**

This industry comprises establishments primarily engaged in manufacturing metal hardware, such as metal hinges, metal handles, keys, and locks (except coin-operated, time locks).

#### **332510 Hardware Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing metal hardware, such as metal hinges, metal handles, keys, and locks (except coin-operated, time locks).

The data published with NAICS code 332510 include the following SIC industries:

- 3429 Hardware, n.e.c. (pt)
- 3499 Fabricated metal products, n.e.c. (pt)

### **3326 Spring and Wire Product Manufacturing**

This NAICS industry group includes establishments classified in NAICS Industry 33261, Spring and Wire Product Manufacturing.

#### **33261 Spring and Wire Product Manufacturing**

This industry comprises establishments primarily engaged in (1) manufacturing steel springs by forming, such as cutting, bending, and heat winding metal rod or strip stock and/or (2) manufacturing wire springs and fabricated wire products from wire drawn elsewhere (except watch and clock springs).

#### **332611 Spring (Heavy Gauge) Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing heavy gauge springs by forming, such as cutting, bending, and heat winding rod or strip stock.

The data published with NAICS code 332611 include the following SIC industry:

- 3493 Steel springs, except wire

### **332612 Spring (Light Gauge) Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing light gauge springs from purchased wire or strip.

The data published with NAICS code 332612 include the following SIC industry:

- 3495 Wire springs (pt)

### **332618 Other Fabricated Wire Product Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing fabricated wire products (except springs) made from purchased wire.

The data published with NAICS code 332618 include the following SIC industries:

- 3315 Steel wire and related products (pt)
- 3399 Primary metal products, n.e.c. (pt)
- 3496 Miscellaneous fabricated wire products

### **3327 Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing**

This NAICS industry group includes establishments classified in the following NAICS Industries: 33271, Machine Shops; and 33272, Turned Product and Screw, Nut, and Bolt Manufacturing.

#### **33271 Machine Shops**

This industry comprises establishments known as machine shops primarily engaged in machining metal parts on a job or order basis. Generally machine shop jobs are low volume using machine tools, such as lathes (including computer numerically controlled); automatic screw machines; and machines for boring, grinding, and milling.

#### **332710 Machine Shops**

This U.S. industry comprises establishments known as machine shops primarily engaged in machining metal parts on a job or order basis. Generally machine shop jobs are low volume using machine tools, such as lathes (including computer numerically controlled); automatic screw machines; and machines for boring, grinding, and milling.

The data published with NAICS code 332710 include the following SIC industry:

- 3599 Industrial machinery, n.e.c. (pt)



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### **33272 Turned Product and Screw, Nut, and Bolt Manufacturing**

This industry comprises establishments primarily engaged in (1) machining precision turned products or (2) manufacturing metal bolts, nuts, screws, rivets, and other industrial fasteners. Included in this industry are establishments primarily engaged manufacturing parts for machinery and equipment on a customized basis.

### **332721 Precision Turned Product Manufacturing**

This U.S. industry comprises establishments known as precision turned manufacturers primarily engaged in machining precision products of all materials on a job or order basis. Generally precision turned product jobs are large volume using machines, such as automatic screw machines, rotary transfer machines, computer numerically controlled (CNC) lathes, or turning centers.

The data published with NAICS code 332721 include the following SIC industry:

3451 Screw machine products

### **332722 Bolt, Nut, Screw, Rivet, and Washer Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing metal bolts, nuts, screws, rivets, and washers, and other industrial fasteners using machines, such as headers, threaders, and nut forming machines.

The data published with NAICS code 332722 include the following SIC industry:

3452 Bolts, nuts, rivets, and washers

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 332722 do not include establishments primarily engaged in the manufacture of turnbuckles and hose clamps. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **3328 Coating, Engraving, Heat Treating, and Allied Activities**

This NAICS industry group includes establishments classified in NAICS Industry 33281, Coating, Engraving, Heat Treating, and Allied Activities.

### **33281 Coating, Engraving, Heat Treating, and Allied Activities**

This industry comprises establishments primarily engaged in one or more of the following: (1) heat treating metals and metal products; (2) enameling, lacquering, varnishing metals and metal products; (3) hot dip galvanizing metals and metal products; (4) engraving, chasing, or

etching metals and metal products (except jewelry; personal goods carried on or about the person, such as compacts and cigarette cases; precious metal products (except precious plated flatware and other plated ware); and printing plates); (5) powder coating metals and metal products; (6) electroplating, plating, anodizing, coloring, and finishing metals and metal products; and (7) providing other metal surfacing services for the trade. Establishments in this industry coat engravings and heat treat metals and metal formed products fabricated elsewhere.

### **332811 Metal Heat Treating**

This U.S. industry comprises establishments primarily engaged in heat treating, such as annealing, tempering, and brazing, metals and metal products for the trade.

The data published with NAICS code 332811 include the following SIC industry:

3398 Metal heat treating

### **332812 Metal Coating, Engraving (Except Jewelry and Silverware), and Allied Services to Manufacturers**

This U.S. industry comprises establishments primarily engaged in one or more of the following: (1) enameling, lacquering, and varnishing metals and metal products; (2) hot dip galvanizing metals and metal products; (3) engraving, chasing, or etching metals and metal products (except jewelry; personal goods carried on or about the person, such as compacts and cigarette cases; precious metal products (except precious plated flatware and other plated ware); and printing plates); (4) powder coating metals and metal products; and (5) providing other metal surfacing services for the trade.

The data published with NAICS code 332812 include the following SIC industry:

3479 Metal coating and allied services (pt)

### **332813 Electroplating, Plating, Polishing, Anodizing, and Coloring**

This U.S. industry comprises establishments primarily engaged in electroplating, plating, anodizing, coloring, buffing, polishing, cleaning, and sandblasting metals and metal products for the trade.

The data published with NAICS code 332813 include the following SIC industry:

3471 Plating and polishing

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 332813 do not include establishments primarily engaged in laminating steel. The NAICS definitions will be fully implemented with the 2002 Economic Census.

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### **3329 Other Fabricated Metal Product Manufacturing**

This industry group comprises establishments primarily engaged in manufacturing fabricated metal products (except forgings and stampings, cutlery and handtools, architectural and structural metals, boilers, tanks, shipping containers, hardware, spring and wire products, machine shop products, turned products, screws, and nuts and bolts).

#### **33291 Metal Valve Manufacturing**

This industry comprises establishments primarily engaged in manufacturing one or more of the following metal valves: (1) industrial valves; (2) fluid power valves and hose fittings; (3) plumbing fixture fittings and trim; and (4) other metal valves and pipe fittings.

#### **332911 Industrial Valve Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing industrial valves and valves for water works and municipal water systems.

The data published with NAICS code 332911 include the following SIC industries:

3491 Industrial valves

#### **332912 Fluid Power Valve and Hose Fitting Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing fluid power valves and hose fittings.

The data published with NAICS code 332912 include the following SIC industries:

3492 Fluid power valves and hose fittings

3728 Aircraft parts and equipment, n.e.c. (pt)

#### **332913 Plumbing Fixture Fitting and Trim Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing metal and plastics plumbing fixture fittings and trim, such as faucets, flush valves, and shower heads.

The data published with NAICS code 332913 include the following SIC industry:

3432 Plumbing fittings and brass goods (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 332913 include establishments primarily engaged in the manufacture of lawn hose nozzels. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **332919 Other Metal Valve and Pipe Fitting Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing metal valves (except industrial valves, fluid power valves, fluid power hose fittings, and plumbing fixture fittings and trim).

The data published with NAICS code 332919 include the following SIC industries:

3429 Hardware, n.e.c. (pt)

3494 Valves and pipe fittings, n.e.c. (pt)

3499 Fabricated metal products, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 332919 do not include establishments primarily engaged in manufacturing lawn hose nozzels. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **33299 All Other Fabricated Metal Product Manufacturing**

This industry comprises establishments primarily engaged in manufacturing fabricated metal products (except forgings and stampings, cutlery and handtools, architectural and structural metal products, boilers, tanks, shipping containers, hardware, spring and wire products, machine shop products, turned products, screws, nuts and bolts, and metal valves).

#### **332991 Ball and Roller Bearing Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing ball and roller bearings of all materials.

The data published with NAICS code 332991 include the following SIC industry:

3562 Ball and roller bearings

#### **332992 Small Arms Ammunition Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing small arms ammunition.

The data published with NAICS code 332992 include the following SIC industry:

3482 Small arms ammunition

#### **332993 Ammunition (Except Small Arms) Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing ammunition (except small arms). Examples of products made by these establishments are bombs, depth charges, rockets (except guided missiles), grenades, mines, and torpedoes.

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The data published with NAICS code 332993 include the following SIC industry:

3483 Ammunition, except small arms, n.e.c.

### **332994 Small Arms Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing small firearms that are carried and fired by the individual.

The data published with NAICS code 332994 include the following SIC industry:

3484 Small arms

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 332994 do not include establishments primarily engaged in the manufacture of tranquilizer guns. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **332995 Other Ordnance and Accessories Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing ordnance (except small arms) and accessories.

The data published with NAICS code 332995 include the following SIC industry:

3489 Ordnance and accessories, n.e.c.

### **332996 Fabricated Pipe and Pipe Fitting Manufacturing**

This U.S. industry comprises establishments primarily engaged in fabricating (such as cutting, threading and bending) metal pipes and pipe fittings made from purchased metal pipe.

The data published with NAICS code 332996 include the following SIC industries:

3353 Aluminum sheet, plate, and foil (pt)

3498 Fabricated pipe and fittings

### **332997 Industrial Pattern Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing industrial patterns.

The data published with NAICS code 332997 include the following SIC industry:

3543 Industrial patterns

### **332998 Enameled Iron and Metal Sanitary Ware Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing enameled iron and metal sanitary ware.

The data published with NAICS code 332998 include the following SIC industry:

3431 Metal sanitary ware

### **332999 All Other Miscellaneous Fabricated Metal Product Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing fabricated metal products (except forgings and stampings, cutlery and handtools, architectural and structural metals, boilers, tanks, shipping containers, hardware, spring and wire products, machine shop products, turned products, screws, nuts, and bolts, metal valves, ball and roller bearings, ammunition, small arms and other ordnances, fabricated pipes and pipe fittings, industrial patterns, and enameled iron and metal sanitary ware).

The data published with NAICS code 332999 include the following SIC industries:

3291 Abrasive products (pt)

3432 Plumbing fixture fittings and trim

3494 Valves and pipe fittings, n.e.c. (pt)

3497 Metal foil and leaf (pt)

3499 Fabricated metal products, n.e.c. (pt)

3537 Industrial trucks and tractors (pt)

3599 Industrial machinery, n.e.c. (pt)

3999 Manufacturing industries, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 332999 do not include establishments primarily engaged in manufacturing fire-place fixtures, traps, handcuffs and leg irons, ladder jacks, or other like metal products, or primarily engaged in manufacturing precious metal hollowware. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **333 Machinery Manufacturing**

Industries in the Machinery Manufacturing subsector create end products that apply mechanical force, for example, the application of gears and levers, to perform work. Some important processes for the manufacture of machinery are forging, stamping, bending, forming, and machining that are used to shape individual pieces of metal. Processes, such as welding and assembling are used to join separate parts together. Although these processes are similar to those used in metal fabricating establishments, machinery manufacturing is different because it

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typically employs multiple metal forming processes in manufacturing the various parts of the machine. Moreover, complex assembly operations are an inherent part of the production process.

In general, design considerations are very important in machinery production. Establishments specialize in making machinery designed for particular applications. Thus, design is considered to be part of the production process for the purpose of implementing NAICS. The NAICS structure reflects this by defining industries and industry groups that make machinery for different applications. A broad distinction exists between machinery that is generally used in a variety of industrial applications (i.e., general-purpose machinery) and machinery that is designed to be used in a particular industry (i.e., special-purpose machinery). Three industry groups consist of special-purpose machinery—Agricultural, Construction, and Mining Machinery Manufacturing; Industrial Machinery Manufacturing; and Commercial and Service Industry Machinery Manufacturing. The other industry groups make general-purpose machinery: Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing; Metalworking Machinery Manufacturing; Engine, Turbine, and Power Transmission Equipment Manufacturing; and Other General-Purpose Machinery Manufacturing.

### **3331 Agriculture, Construction, and Mining Machinery Manufacturing**

This NAICS industry group includes establishments classified in the following NAICS Industries: 33311, Agricultural Implement Manufacturing; 33312, Construction Machinery Manufacturing; and 33313, Mining and Oil and Gas Field Machinery Manufacturing.

#### **33311 Agricultural Implement Manufacturing**

This industry comprises establishments primarily engaged in manufacturing farm machinery and equipment, powered mowing equipment, and other powered home lawn and garden equipment.

#### **333111 Farm Machinery and Equipment Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing agricultural and farm machinery and equipment, and other turf and grounds care equipment, including planting, harvesting, and grass mowing equipment (except lawn and garden-type).

The data published with NAICS code 333111 include the following SIC industry:

3523 Farm machinery and equipment (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to

NAICS. Data for NAICS industry 333111 do not include establishments primarily engaged in manufacturing cotton ginning machinery. The NAICS definitions will be fully implemented with the 2002 Economic Census.

#### **333112 Lawn and Garden Tractor and Home Lawn and Garden Equipment Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing powered lawnmowers, lawn and garden tractors, and other home lawn and garden equipment, such as tillers, shredders, and yard vacuums and blowers.

The data published with NAICS code 333112 include the following SIC industry:

3524 Lawn and garden equipment (pt)

#### **33312 Construction Machinery Manufacturing**

This industry comprises establishments primarily engaged in manufacturing construction machinery, surface mining machinery, and logging equipment.

#### **333120 Construction Machinery Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing construction machinery, surface mining machinery, and logging equipment.

The data published with NAICS code 333120 include the following SIC industry:

3531 Construction machinery (pt)

#### **33313 Mining and Oil and Gas Field Machinery Manufacturing**

This industry comprises establishments primarily engaged in manufacturing oil and gas field and underground mining machinery and equipment.

#### **333131 Mining Machinery and Equipment Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) manufacturing underground mining machinery and equipment, such as coal breakers, mining cars, core drills, coal cutters, rock drills and (2) manufacturing mineral beneficiating machinery and equipment used in surface or underground mines.

The data published with NAICS code 333131 include the following SIC industry:

3532 Mining machinery

#### **333132 Oil and Gas Field Machinery and Equipment Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) manufacturing oil and gas field machinery and equipment, such as oil and gas field drilling machinery and equipment; oil and gas field production machinery and equipment; and oil and gas field derricks and (2) manufacturing water well drilling machinery.

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The data published with NAICS code 333132 include the following SIC industry:

3533 Oil field machinery

### **3332 Industrial Machinery Manufacturing**

This NAICS industry group includes establishments classified in the following NAICS Industries: 33321, Sawmill and Woodworking Machinery Manufacturing; 33322, Plastics and Rubber Industry Machinery Manufacturing; and 33329, Other Industrial Machinery Manufacturing.

#### **33321 Sawmill and Woodworking Machinery Manufacturing**

This industry comprises establishments primarily engaged in manufacturing sawmill and woodworking machinery (except handheld), such as circular and band sawing equipment, planing machinery, and sanding machinery.

#### **333210 Sawmill and Woodworking Machinery Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing sawmill and woodworking machinery (except handheld), such as circular and band sawing equipment, planing machinery, and sanding machinery.

The data published with NAICS code 333210 include the following SIC industry:

3553 Woodworking machinery

#### **33322 Plastics and Rubber Industry Machinery Manufacturing**

This industry comprises establishments primarily engaged in manufacturing plastics and rubber products making machinery, such as plastics compression, extrusion and injection molding machinery and equipment, and tire building and recapping machinery and equipment.

#### **333220 Plastics and Rubber Industry Machinery Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing plastics and rubber products making machinery, such as plastics compression, extrusion and injection molding machinery and equipment, and tire building and recapping machinery and equipment.

The data published with NAICS code 333220 include the following SIC industry:

3559 Special industry machinery, n.e.c. (pt)

#### **33329 Other Industrial Machinery Manufacturing**

This industry comprises establishments primarily engaged in manufacturing industrial machinery (except agricultural and farm-type, construction, mining, sawmill and woodworking, and plastics and rubber products making machinery).

### **333291 Paper Industry Machinery Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing paper industry machinery for making paper and paper products, such as pulp making machinery, paper and paperboard making machinery, and paper and paperboard converting machinery.

The data published with NAICS code 333291 include the following SIC industry:

3554 Paper industries machinery

### **333292 Textile Machinery Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing textile machinery for making thread, yarn, and fiber.

The data published with NAICS code 333292 include the following SIC industries:

3552 Textile machinery

3699 Electrical equipment and supplies, n.e.c. (pt)

### **333293 Printing Machinery and Equipment Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing printing and bookbinding machinery and equipment, such as printing presses, type-setting machinery, and bindery machinery.

The data published with NAICS code 333293 include the following SIC industries:

3555 Printing trades machinery

3699 Electrical equipment and supplies, n.e.c. (pt)

### **333294 Food Product Machinery Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing food and beverage manufacturing-type machinery and equipment, such as dairy product plant machinery and equipment (e.g., homogenizers, pasteurizers, ice cream freezers), bakery machinery and equipment (e.g., dough mixers, bake ovens, pastry rolling machines), meat and poultry processing and preparation machinery, and other commercial food products machinery (e.g., slicers, choppers, and mixers).

The data published with NAICS code 333294 include the following SIC industry:

3556 Food products machinery

### **333295 Semiconductor Machinery Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing wafer processing equipment, semiconductor assembly and packaging equipment, and other semiconductor making machinery.

The data published with NAICS code 333295 include the following SIC industry:

3559 Special industry machinery, n.e.c. (pt)

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### **333298 All Other Industrial Machinery Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing industrial machinery (except agricultural and farm-type, construction and mining machinery, sawmill and woodworking machinery, plastics and rubber making machinery, paper and paperboard making machinery, textile machinery, printing machinery and equipment, food manufacturing-type machinery, and semiconductor making machinery).

The data published with NAICS code 333298 include the following SIC industries:

3559 Special industry machinery, n.e.c. (pt)

3639 Household appliances, n.e.c. (pt)

### **3333 Commercial and Service Industry Machinery Manufacturing**

This NAICS industry group includes establishments classified in NAICS Industry 33331, Commercial and Service Industry Machinery Manufacturing.

### **33331 Commercial and Service Industry Machinery Manufacturing**

This industry comprises establishments primarily engaged in manufacturing commercial and service machinery, such as automatic vending machinery, commercial laundry and drycleaning machinery, office machinery, photographic and photocopying machinery, optical instruments and machinery, automotive maintenance equipment (except mechanic's handtools), industrial vacuum cleaners, and commercial-type cooking equipment.

### **333311 Automatic Vending Machine Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) manufacturing coin, token, currency, or magnetic card operated vending machines and/or (2) manufacturing coin operated mechanism for machines, such as vending machines, lockers, and laundry machines.

The data published with NAICS code 333311 include the following SIC industry:

3581 Automatic merchandising machines

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 333311 do not include establishments primarily engaged in the manufacture of change making machines. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **333312 Commercial Laundry, Drycleaning, and Pressing Machine Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing commercial and industrial laundry and drycleaning equipment and pressing machines.

The data published with NAICS code 333312 include the following SIC industry:

3582 Commercial laundry equipment

### **333313 Office Machinery Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing office machinery (except computers and photocopying equipment), such as mail-handling machinery and equipment, calculators, typewriters, and dedicated word processing equipment.

The data published with NAICS code 333313 include the following SIC industries:

3578 Calculating and accounting equipment (pt)

3579 Office machines, n.e.c. (pt)

### **333314 Optical Instrument and Lens Manufacturing**

This U.S. industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing optical instruments and lens, such as binoculars, microscopes (except electron, proton), telescopes, prisms, and lenses (except ophthalmic); (2) coating or polishing lenses (except ophthalmic); and (3) mounting lenses (except ophthalmic).

The data published with NAICS code 333314 include the following SIC industries:

3699 Electrical equipment and supplies, n.e.c. (pt)

3827 Optical instruments and lenses

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing implemented the conversion to NAICS differently. Data for NAICS industry 333314 include establishments primarily engaged in the manufacture of sighting and tracking laser products.

### **333315 Photographic and Photocopying Equipment Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing photographic and photocopying equipment, such as cameras (except television, video, digital projectors, film developing equipment, photocopying equipment, and microfilm equipment).

The data published with NAICS code 333315 include the following SIC industries:

3699 Electrical equipment and supplies, n.e.c. (pt)

3861 Photographic equipment and supplies (pt)

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This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing implemented the conversion to NAICS differently. Data for NAICS industry 333315 include establishments primarily engaged in the manufacture of photographic laser products.

### **333319 Other Commercial and Service Industry Machinery Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing commercial and service industry equipment (except automatic vending machines, commercial laundry, drycleaning and pressing machines, office machinery, optical instruments and lenses, and photographic and photocopying equipment).

The data published with NAICS code 333319 include the following SIC industries:

3559 Special industry machinery, n.e.c. (pt)

3589 Service industry machinery, n.e.c.

3599 Industrial machinery, n.e.c. (pt)

3699 Electrical equipment and supplies, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 333319 do not include establishments primarily engaged in the manufacture of beauty and barbershop equipment, except chairs. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **3334 Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing**

This NAICS industry group includes establishments classified in NAICS Industry 33341, Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing.

#### **33341 Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing**

This industry comprises establishments primarily engaged in manufacturing ventilating, heating, air-conditioning, and commercial and industrial refrigeration and freezer equipment.

#### **333411 Air Purification Equipment Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing stationary air purification equipment, such as industrial dust and fume collection equipment, electrostatic precipitation equipment, warm air furnace filters, air washers, and other dust collection equipment.

The data published with NAICS code 333411 include the following SIC industry:

3564 Blowers and fans (pt)

#### **333412 Industrial and Commercial Fan and Blower Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing attic fans and industrial and commercial fans and blowers, such as commercial exhaust fans and commercial ventilating fans.

The data published with NAICS code 333412 include the following SIC industry:

3564 Blowers and fans (pt)

#### **333414 Heating Equipment (Except Warm Air Furnaces) Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing heating equipment (except electric and warm air furnaces), such as heating boilers, heating stoves, floor and wall furnaces, and wall and baseboard heating units.

The data published with NAICS code 333414 include the following SIC industries:

3433 Heating equipment, except electric

3634 Electric housewares and fans (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 333414 do not include establishments primarily engaged in the manufacture of cooling towers of wood, metal, or sheet metal, or the manufacture of electric swimming pool heaters. The NAICS definitions will be fully implemented with the 2002 Economic Census.

#### **333415 Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) manufacturing air-conditioning (except motor vehicle) and warm air furnace equipment and/or (2) manufacturing commercial and industrial refrigeration and freezer equipment.

The data published with NAICS code 333415 include the following SIC industries:

3443 Fabricated plate work, boiler shops (pt)

3585 Refrigeration and heating equipment (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to

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NAICS. Data for NAICS industry 333415 include establishments primarily engaged in the manufacture of metal cooling towers. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **3335 Metalworking Machinery Manufacturing**

This NAICS industry group includes establishments classified in NAICS Industry 33351, Metalworking Machinery Manufacturing.

#### **33351 Metalworking Machinery Manufacturing**

This industry comprises establishments primarily engaged in manufacturing metalworking machinery, such as metal cutting and metal forming machine tools; cutting tools; and accessories for metalworking machinery; special dies, tools, jigs, and fixtures; industrial molds; rolling mill machinery; assembly machinery; coil handling, conversion, or straightening equipment; and wire drawing and fabricating machines.

##### **333511 Industrial Mold Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing industrial molds for casting metals or forming other materials, such as plastics, glass, or rubber.

The data published with NAICS code 333511 include the following SIC industry:

3544 Special dies, tools, jigs, and fixtures (pt)

##### **333512 Machine Tool (Metal Cutting Types) Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing metal cutting machine tools (except handtools).

The data published with NAICS code 333512 include the following SIC industries:

3541 Machine tools, metal cutting types

3699 Electrical equipment and supplies, n.e.c. (pt)

##### **333513 Machine Tool (Metal Forming Types) Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing metal forming machine tools (except handtools), such as punching, sheering, bending, forming, pressing, forging and die-casting machines.

The data published with NAICS code 333513 include the following SIC industries:

3542 Machine tools, metal forming types

#### **333514 Special Die and Tool, Die Set, Jig, and Fixture Manufacturing**

This U.S. industry comprises establishments, known as tool and die shops, primarily engaged in manufacturing special tools and fixtures, such as cutting dies and jigs.

The data published with NAICS code 333514 include the following SIC industry:

3544 Special dies, tools, jigs, and fixtures (pt)

#### **333515 Cutting Tool and Machine Tool Accessory Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing accessories and attachments for metal cutting and metal forming machine tools.

The data published with NAICS code 333515 include the following SIC industry:

3545 Machine tool accessories (pt)

#### **333516 Rolling Mill Machinery and Equipment Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing rolling mill machinery and equipment for metal production.

The data published with NAICS code 333516 include the following SIC industry:

3547 Rolling mill machinery

#### **333518 Other Metalworking Machinery Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing metal working machinery (except industrial molds; metal cutting machine tools; metal forming machine tools; special dies and tools, die sets, jigs, and fixtures; cutting tools and machine tool accessories; and rolling mill machinery and equipment).

The data published with NAICS code 333518 include the following SIC industry:

3549 Metalworking machinery, n.e.c.

#### **3336 Engine, Turbine, and Power Transmission Equipment Manufacturing**

This NAICS industry group includes establishments classified in NAICS Industry 33361, Engine, Turbine, and Power Transmission Equipment Manufacturing.

##### **33361 Engine, Turbine, and Power Transmission Equipment Manufacturing**

This industry comprises establishments primarily engaged in manufacturing turbines, power transmission equipment, and internal combustion engines (except automotive gasoline and aircraft).



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### **333611 Turbine and Turbine Generator Set Units Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing turbines (except aircraft); and complete turbine generator set units, such as steam, hydraulic, gas, and wind.

The data published with NAICS code 333611 include the following SIC industry:

3511 Turbines and turbine generator sets

### **333612 Speed Changer, Industrial High-Speed Drive, and Gear Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing gears, speed changers, and industrial high-speed drives (except hydrostatic).

The data published with NAICS code 333612 include the following SIC industry:

3566 Speed changers, drives, and gears

### **333613 Mechanical Power Transmission Equipment Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing mechanical power transmission equipment (except motor vehicle and aircraft), such as plain bearings, brakes and clutches (except motor vehicle and electromagnetic industrial control), couplings, joints, and drive chains.

The data published with NAICS code 333613 include the following SIC industry:

3568 Power transmission equipment, n.e.c.

### **333618 Other Engine Equipment Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing internal combustion engines (except automotive gasoline and aircraft).

The data published with NAICS code 333618 include the following SIC industries:

3519 Internal combustion engines, n.e.c. (pt)

3699 Electrical equipment and supplies, n.e.c. (pt)

### **3339 Other General-Purpose Machinery Manufacturing**

This NAICS industry group includes establishments classified in the following NAICS Industries: 33391, Pump and Compressor Manufacturing; 33392, Material Handling Equipment Manufacturing; and 33399, All Other General-Purpose Machinery Manufacturing.

### **33391 Pump and Compressor Manufacturing**

This industry comprises establishments primarily engaged in manufacturing pumps and compressors, such as general-purpose air and gas compressors, nonagricultural spraying and dusting equipment, general-purpose pumps and pumping equipment (except fluid power pumps and motors), and measuring and dispensing pumps.

#### **333911 Pump and Pumping Equipment Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing general-purpose pumps and pumping equipment (except fluid power pumps and motors), such as reciprocating pumps, turbine pumps, centrifugal pumps, rotary pumps, diaphragm pumps, domestic water system pumps, oil well and oil field pumps and sump pumps.

The data published with NAICS code 333911 include the following SIC industries:

3561 Pumps and pumping equipment

3743 Railroad equipment (pt)

#### **333912 Air and Gas Compressor Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing general-purpose air and gas compressors, such as reciprocating compressors, centrifugal compressors, vacuum pumps (except laboratory), and nonagricultural spraying and dusting compressors and spray gun units.

The data published with NAICS code 333912 include the following SIC industry:

3563 Air and gas compressors

#### **333913 Measuring and Dispensing Pump Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing measuring and dispensing pumps, such as gasoline pumps and lubricating oil measuring and dispensing pumps.

The data published with NAICS code 333913 include the following SIC industry:

3586 Measuring and dispensing pumps

#### **33392 Material Handling Equipment Manufacturing**

This industry comprises establishments primarily engaged in manufacturing material handling equipment, such as elevators and moving stairs; conveyors and conveying equipment; overhead traveling cranes, hoists, and monorail systems; and industrial trucks, tractors, trailers, and stacker machinery.

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### **333921 Elevator and Moving Stairway Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing elevators and moving stairways.

The data published with NAICS code 333912 include the following SIC industry:

3534 Elevators and moving stairways

### **333922 Conveyor and Conveying Equipment Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing conveyors and conveying equipment, such as gravity conveyors, trolley conveyors, tow conveyors, pneumatic tube conveyors, carousel conveyors, farm conveyors, and belt conveyors.

The data published with NAICS code 333922 include the following SIC industries:

3523 Farm machinery and equipment (pt)

3535 Conveyors and conveying equipment

### **333923 Overhead Traveling Crane, Hoist, and Monorail System Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing overhead traveling cranes, hoists, and monorail systems.

The data published with NAICS code 333923 include the following SIC industries:

3531 Construction machinery (pt)

3536 Hoists, cranes, and monorails

### **333924 Industrial Truck, Tractor, Trailer, and Stacker Machinery Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing industrial trucks, tractors, trailers, and stackers (i.e., truck-type) such as forklifts, pallet loaders and unloaders, and portable loading docks.

The data published with NAICS code 333924 include the following SIC industry:

3537 Industrial trucks and tractors (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 332994 do not include establishments primarily engaged in the manufacture of tranquilizer guns. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **33399 All Other General-Purpose Machinery Manufacturing**

This industry comprises establishments primarily engaged in manufacturing general-purpose machinery (except ventilation, heating, air-conditioning, and commercial refrigeration equipment; metal working machinery; engines, turbines, and power transmission equipment; pumps and compressors; and material handling equipment).

#### **333991 Power-Driven Handtool Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing power-driven (e.g., battery, corded, pneumatic) handtools, such as drills, screwguns, circular saws, chain saws, staplers, and nailers.

The data published with NAICS code 333991 include the following SIC industry:

3546 Power-driven handtools

#### **333992 Welding and Soldering Equipment Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing welding and soldering equipment and accessories (except transformers), such as arc, resistance, gas, plasma, laser, electron beam, and ultrasonic welding equipment; welding electrodes; coated or cored welding wire; and soldering equipment (except handheld).

The data published with NAICS code 333992 include the following SIC industries:

3548 Welding apparatus (pt)

3699 Electrical equipment and supplies, n.e.c. (pt)

#### **333993 Packaging Machinery Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing packaging machinery, such as wrapping, bottling, canning, and labeling machinery.

The data published with NAICS code 333993 include the following SIC industry:

3565 Packaging machinery

#### **333994 Industrial Process Furnace and Oven Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing industrial process furnaces, ovens, induction and dielectric heating equipment, and kilns (except cement, chemical, wood).

The data published with NAICS code 333994 include the following SIC industry:

3567 Industrial furnaces and ovens

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### **333995 Fluid Power Cylinder and Actuator Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing fluid power (i.e., hydraulic and pneumatic) cylinders and actuators.

The data published with NAICS code 333995 include the following SIC industries:

3593 Fluid power cylinders and actuators

3728 Aircraft parts and equipment, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing implemented the conversion to NAICS differently. Data for NAICS industry 333995 include establishments primarily engaged in the manufacture of aerospace-type fluid power actuators. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **333996 Fluid Power Pump and Motor Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing fluid power (i.e., hydraulic and pneumatic) pumps and motors.

The data published with NAICS code 333996 include the following SIC industries:

3594 Fluid power pumps and motors

3728 Aircraft parts and equipment, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing implemented the conversion to NAICS differently. Data for NAICS industry 333996 include establishments primarily engaged in the manufacture of aerospace-type fluid power actuators. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **333997 Scale and Balance (Except Laboratory) Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing scales and balances (except laboratory).

The data published with NAICS code 333997 include the following SIC industry:

3596 Scales and balances, except laboratory

### **333999 All Other Miscellaneous General-Purpose Machinery Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing general-purpose machinery (except ventilating, heating, air-conditioning, and commercial refrigeration equipment; metal working machinery;

engines, turbines, and power transmission equipment; pumps and compressors; material handling equipment; power-driven handtools; welding and soldering equipment; packaging machinery; industrial process furnaces and ovens; fluid power cylinders and actuators; fluid power pumps and motors; and scales and balances).

The data published with NAICS code 333999 include the following SIC industries:

3569 General industrial machinery, n.e.c.

3599 Industrial machinery, n.e.c. (pt)

### **334 Computer and Electronic Product Manufacturing**

Industries in the Computer and Electronic Product Manufacturing subsector group establishments that manufacture computers, computer peripherals, communications equipment, and similar electronic products, and establishments that manufacture components for such products. The Computer and Electronic Product Manufacturing industries have been combined in the hierarchy of NAICS because of the economic significance they have attained. Their rapid growth suggests that they will become even more important to the economies of all three North American countries in the future, and in addition their manufacturing processes are fundamentally different from the manufacturing processes of other machinery and equipment. The design and use of integrated circuits and the application of highly specialized miniaturization technologies are common elements in the production technologies of the computer and electronic subsector. Convergence of technology motivates this NAICS subsector. Digitalization of sound recording, for example, causes both the medium (the compact disc) and the equipment to resemble the technologies for recording, storing, transmitting, and manipulating data. Communications technology and equipment have been converging with computer technology. When technologically related components are in the same sector, it makes it easier to adjust the classification for future changes, without needing to redefine its basic structure. The creation of the Computer and Electronic Product Manufacturing subsector will assist in delineating new and emerging industries because the activities that will serve as the probable sources of new industries, such as computer manufacturing and communications equipment manufacturing, or computers and audio equipment are brought together. As new activities emerge, they are less likely, therefore, to cross the subsector boundaries of the classification.

### **3341 Computer and Peripheral Equipment Manufacturing**

This NAICS industry group includes establishments classified in NAICS Industry 33411, Computer and Peripheral Equipment Manufacturing.

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### **33411 Computer and Peripheral Equipment Manufacturing**

This industry comprises establishments primarily engaged in manufacturing and/or assembling electronic computers, such as mainframes, personal computers, workstations, laptops, and computer servers; and computer peripheral equipment, such as storage devices, printers, monitors, input/output devices and terminals. Computers can be analog, digital, or hybrid. Digital computers, the most common type, are devices that do all of the following: (1) store the processing program or programs and the data immediately necessary for the execution of the program; (2) can be freely programmed in accordance with the requirements of the user; (3) perform arithmetical computations specified by the user; and (4) execute, without human intervention, a processing program that requires the computer to modify its execution by logical decision during the processing run. Analog computers are capable of simulating mathematical models and comprise at least analog, control, and programming elements.

#### **334111 Electronic Computer Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing and/or assembling electronic computers, such as mainframes, personal computers, workstations, laptops, and computer servers. Computers can be analog, digital, or hybrid. Digital computers, the most common type, are devices that do all of the following: (1) store the processing program or programs and the data immediately necessary for the execution of the program; (2) can be freely programmed in accordance with the requirements of the user; (3) perform arithmetical computations specified by the user; and (4) execute, without human intervention, a processing program that requires the computer to modify its execution by logical decision during the processing run. Analog computers are capable of simulating mathematical models and contain at least analog, control, and programming elements. The manufacture of computers includes the assembly or integration of processors, coprocessors, memory, storage, and input/output devices into a user-programmable final product.

The data published with NAICS code 334111 include the following SIC industry:

3571 Electronic computers

#### **334112 Computer Storage Device Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing computer storage devices that allow the storage and retrieval of data from a phase change, magnetic, optical, or magnetic/optical media. Examples of products made by these establishments are CD-ROM drives, floppy disk drives, hard disk drives, and tape storage and backup units.

The data published with NAICS code 334112 include the following SIC industry:

3572 Computer storage devices

#### **334113 Computer Terminal Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing computer terminals. Computer terminals are input/output devices that connect with a central computer for processing.

The data published with NAICS code 334113 include the following SIC industry:

3575 Computer terminals

#### **334119 Other Computer Peripheral Equipment Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing computer peripheral equipment (except storage devices and computer terminals).

The data published with NAICS code 334119 include the following SIC industries:

3577 Computer peripheral equipment, n.e.c.

3578 Calculating and accounting equipment (pt)

3699 Electrical equipment and supplies, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing implemented the conversion to NAICS differently. Data for NAICS industry 334119 include establishments primarily engaged in the manufacture of laser products.

#### **3342 Communications Equipment Manufacturing**

This NAICS industry group includes establishments classified in the following NAICS Industries: 33421, Telephone Apparatus Manufacturing; 33422, Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing; and 33429, Other Communications Equipment Manufacturing.

#### **33421 Telephone Apparatus Manufacturing**

This industry comprises establishments primarily engaged in manufacturing wire telephone and data communications equipment. These products may be stand-alone or board-level components of a larger system. Examples of products made by these establishments are central office switching equipment, cordless telephones (except cellular), PBX equipment, telephones, telephone answering machines, and data communications equipment, such as bridges, routers, and gateways.

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### **334210 Telephone Apparatus Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing wire telephone and data communications equipment. These products may be stand-alone or board-level components of a larger system. Examples of products made by these establishments are central office switching equipment, cordless telephones (except cellular), PBX equipment, telephones, telephone answering machines, and data communications equipment, such as bridges, routers, and gateways.

The data published with NAICS code 334210 include the following SIC industry:

3661 Telephone and telegraph apparatus (pt)

### **33422 Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing**

This industry comprises establishments primarily engaged in manufacturing radio and television broadcast and wireless communications equipment. Examples of products made by these establishments are: transmitting and receiving antennas, cable television equipment, GPS equipment, pagers, cellular phones, mobile communications equipment, and radio and television studio and broadcasting equipment.

### **334220 Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing radio and television broadcast and wireless communications equipment. Examples of products made by these establishments are: transmitting and receiving antennas, cable television equipment, GPS equipment, pagers, cellular phones, mobile communications equipment, and radio and television studio and broadcasting equipment.

The data published with NAICS code 334220 include the following SIC industries:

3663 Radio and TV communications equipment

3679 Electronic components, n.e.c. (pt)

### **33429 Other Communications Equipment Manufacturing**

This industry comprises establishments primarily engaged in manufacturing communications equipment (except telephone apparatus, and radio and television broadcast, and wireless communications equipment).

### **334290 Other Communications Equipment Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing communications equipment (except telephone apparatus, radio and television broadcast, and wireless communications equipment).

The data published with NAICS code 334290 include the following SIC industry:

3669 Communications equipment, n.e.c.

### **3343 Audio and Video Equipment Manufacturing**

This NAICS industry group includes establishments classified in NAICS Industry 33431, Audio and Video Equipment Manufacturing.

### **33431 Audio and Video Equipment Manufacturing**

This industry comprises establishments primarily engaged in manufacturing electronic audio and video equipment for home entertainment, motor vehicle, public address and musical instrument amplifications. Examples of products made by these establishments are video cassette recorders, televisions, stereo equipment, speaker systems, household-type video cameras, jukeboxes, and amplifiers for musical instruments and public address systems.

### **334310 Audio and Video Equipment Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing electronic audio and video equipment for home entertainment, motor vehicle, public address and musical instrument amplifications. Examples of products made by these establishments are video cassette recorders, televisions, stereo equipment, speaker systems, household-type video cameras, jukeboxes, and amplifiers for musical instruments and public address systems.

The data published with NAICS code 334310 include the following SIC industry:

3651 Household audio and video equipment

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 334310 do not include establishments primarily engaged in the manufacture of radio headphones. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **3344 Semiconductor and Other Electronic Component Manufacturing**

This NAICS industry group includes establishments classified in NAICS Industry 33441, Semiconductor and Other Electronic Component Manufacturing.

### **33441 Semiconductor and Other Electronic Component Manufacturing**

This industry comprises establishments primarily engaged in manufacturing semiconductors and other components for electronic applications. Examples of products

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made by these establishments are capacitors, resistors, microprocessors, bare and loaded printed circuit boards, electron tubes, electronic connectors, and computer modems.

### **334411 Electron Tube Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing electron tubes and parts (except glass blanks). Examples of products made by these establishments are cathode ray tubes (i.e., picture tubes), klystron tubes, magnetron tubes, and traveling wave tubes.

The data published with NAICS code 334411 include the following SIC industries:

3671 Electron tubes

### **334412 Bare Printed Circuit Board Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing bare (i.e., rigid or flexible) printed circuit boards without mounted electronic components. These establishments print, perforate, plate, screen, etch, or photoprint interconnecting pathways for electric current on laminates.

The data published with NAICS code 334412 include the following SIC industry:

3672 Printed circuit boards

### **334413 Semiconductor and Related Device Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing semiconductors and related solid state devices. Examples of products made by these establishments are integrated circuits, memory chips, microprocessors, diodes, transistors, solar cells, and other optoelectronic devices.

The data published with NAICS code 334413 include the following SIC industry:

3674 Semiconductors and related devices

### **334414 Electronic Capacitor Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing electronic fixed and variable capacitors and condensers.

The data published with NAICS code 334414 include the following SIC industry:

3675 Electronic capacitors

### **334415 Electronic Resistor Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing electronic resistors, such as fixed and variable resistors, resistor networks, thermistors, and varistors.

The data published with NAICS code 334415 include the following SIC industry:

3676 Electronic resistors

### **334416 Electronic Coil, Transformer, and Other Inductor Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing electronic inductors, such as coils and transformers.

The data published with NAICS code 334416 include the following SIC industries:

3661 Telephone and telegraph apparatus (pt)

3677 Electronic coils and transformers

3825 Instruments to measure electricity (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 334416 include establishments primarily engaged in the manufacture of telephone transformers or portable instrument transformers. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **334417 Electronic Connector Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing electronic connectors, such as coaxial, cylindrical, rack and panel, pin and sleeve, printed circuit and fiber optic.

The data published with NAICS code 334417 include the following SIC industry:

3678 Electronic connectors

### **334418 Printed Circuit Assembly (Electronic Assembly) Manufacturing**

This U.S. industry comprises establishments primarily engaged in loading components onto printed circuit boards or who manufacture and ship loaded printed circuit boards. Also known as printed circuit assemblies, electronics assemblies, or modules, these products are printed circuit boards that have some or all of the semiconductor and electronic components inserted or mounted and are inputs to a wide variety of electronic systems and devices.

The data published with NAICS code 334418 include the following SIC industries:

3661 Telephone and telegraph apparatus (pt)

3679 Electronic components, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 334418 do not include

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establishments primarily engaged in the manufacture of plotter controllers. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **334419 Other Electronic Component Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing electronic components (except electron tubes; bare printed circuit boards; semiconductors and related devices; electronic capacitors; electronic resistors; coils, transformers and other inductors; connectors; and loaded printed circuit boards).

The data published with NAICS code 334419 include the following SIC industry:

3679 Electronic components, n.e.c. (pt)

### **3345 Navigational, Measuring, Medical, and Control Instruments Manufacturing**

This NAICS industry group includes establishments classified in NAICS Industry 33451, Navigational, Measuring, Medical, and Control Instruments Manufacturing.

#### **33451 Navigational, Measuring, Medical, and Control Instruments Manufacturing**

This industry comprises establishments primarily engaged in manufacturing navigational, measuring, electromedical, and control instruments. Examples of products made by these establishments are aeronautical instruments, appliance regulators and controls (except switches), laboratory analytical instruments, navigation and guidance systems, and physical properties testing equipment.

#### **334510 Electromedical and Electrotherapeutic Apparatus Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing electromedical and electrotherapeutic apparatus, such as magnetic resonance imaging equipment, medical ultrasound equipment, pacemakers, hearing aids, electrocardiographs, and electromedical endoscopic equipment.

The data published with NAICS code 334510 include the following SIC industries:

3699 Electrical equipment and supplies, n.e.c. (pt)

3842 Surgical appliances and supplies (pt)

3845 Electromedical equipment

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing implemented the conversion to NAICS differently. Data for NAICS industry 334510 include establishments primarily engaged in the manufacture of electro-medical laser products.

#### **334511 Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing search, detection, navigation, guidance, aeronautical, and nautical systems and instruments. Examples of products made by these establishments are aircraft instruments (except engine), flight recorders, navigational instruments and systems, radar systems and equipment, and sonar systems and equipment.

The data published with NAICS code 334511 include the following SIC industries:

3699 Electrical equipment and supplies, n.e.c. (pt)

3812 Search and navigation equipment

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing implemented the conversion to NAICS differently. Data for NAICS industry 334511 include establishments primarily engaged in the manufacture of search and detection laser products.

#### **334512 Automatic Environmental Control Manufacturing for Residential, Commercial, and Appliance Use**

This U.S. industry comprises establishments primarily engaged in manufacturing automatic controls and regulators for applications, such as heating, air-conditioning, refrigeration and appliances.

The data published with NAICS code 334512 include the following SIC industry:

3822 Environmental controls

#### **334513 Instruments and Related Products Manufacturing for Measuring, Displaying, and Controlling Industrial Process Variables**

This U.S. industry comprises establishments primarily engaged in manufacturing instruments and related devices for measuring, displaying, indicating, recording, transmitting, and controlling industrial process variables. These instruments measure, display or control (monitor, analyze, and so forth) industrial process variables, such as temperature, humidity, pressure, vacuum, combustion, flow, level, viscosity, density, acidity, concentration, and rotation.

The data published with NAICS code 334513 include the following SIC industry:

3823 Process control instruments

#### **334514 Totalizing Fluid Meter and Counting Device Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing totalizing (i.e., registering) fluid meters and counting devices. Examples of products made

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by these establishments are gas consumption meters, water consumption meters, parking meters, taxi meters, motor vehicle gauges, and fare collection equipment.

The data published with NAICS code 334514 include the following SIC industry:

3824 Fluid meters and counting devices

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 334514 do not include establishments primarily engaged in the manufacture of automotive ammeters and voltmeters or motor vehicle gauges. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **334515 Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals**

This U.S. industry comprises establishments primarily engaged in manufacturing instruments for measuring and testing the characteristics of electricity and electrical signals. Examples of products made by these establishments are circuit and continuity testers, volt meters, ohm meters, wattmeters, multimeters, and semiconductor test equipment.

The data published with NAICS code 334515 include the following SIC industry:

3825 Instruments to measure electricity (pt)

### **334516 Analytical Laboratory Instrument Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing instruments and instrumentation systems for laboratory analysis of the chemical or physical composition or concentration of samples of solid, fluid, gaseous, or composite material.

The data published with NAICS code 334516 include the following SIC industries:

3699 Electrical equipment and supplies, n.e.c. (pt)

3826 Analytical instruments

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing implemented the conversion to NAICS differently. Data for NAICS industry 334516 include establishments primarily engaged in the manufacture of analytical and scientific laser products.

### **334517 Irradiation Apparatus Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing irradiation apparatus and tubes for applications, such as medical diagnostic, medical therapeutic, industrial, research and scientific evaluation. Irradiation can take the form of beta-rays, gamma-rays, X-rays, or other ionizing radiation.

The data published with NAICS code 334517 include the following SIC industry:

3844 X-ray apparatus and tubes

### **334518 Watch, Clock, and Parts Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing and/or assembling clocks; watches; timing mechanisms for clockwork operated devices; time clocks; time and date recording devices; and clock and watch parts (except crystals), such as springs, jewels, and modules.

The data published with NAICS code 334518 include the following SIC industries:

3495 Wire springs (pt)

3579 Office machines, n.e.c. (pt)

3873 Watches, clocks, and watchcases

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 334518 do not include establishments primarily engaged in the manufacture of electronic chronometers or watch jewels. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **334519 Other Measuring and Controlling Device Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing measuring and controlling devices (except search, detection, navigation, guidance, aeronautical, and nautical instruments and systems; automatic environmental controls for residential, commercial, and appliance use; instruments for measurement, display, and control of industrial process variables; totalizing fluid meters and counting devices; instruments for measuring and testing electricity and electrical signals; analytical laboratory instruments; watches, clocks, and parts; irradiation equipment; and electromedical and electrotherapeutic apparatus).

The data published with NAICS code 334519 include the following SIC industries:

3699 Electrical equipment and supplies, n.e.c. (pt)

3829 Measuring and controlling devices, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing implemented the conversion to NAICS differently. Data for NAICS industry 334519 include establishments primarily engaged in the manufacture of commercial geophysical, meteorological, survey, and drafting laser products.



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### **3346 Manufacturing and Reproducing Magnetic and Optical Media**

This NAICS industry group includes establishments classified in NAICS Industry 33461, Manufacturing and Reproducing Magnetic and Optical Media.

#### **33461 Manufacturing and Reproducing Magnetic and Optical Media**

This industry comprises establishments primarily engaged in (1) manufacturing optical and magnetic media, such as blank audio tape, blank video tape, and blank diskettes and/or (2) mass duplicating (i.e., making copies) audio, video, software, and other data on magnetic, optical, and similar media.

##### **334611 Software Reproducing**

This U.S. industry comprises establishments primarily engaged in mass reproducing computer software. These establishments do not generally develop any software; they mass reproduce data and programs on magnetic media, such as diskettes, tapes, or cartridges. Establishments in this industry mass reproduce products, such as CD-ROMs and game cartridges.

The data published with NAICS code 334611 include the following SIC industries:

7379 Computer Related Services, n.e.c. (pt)

##### **334612 Prerecorded Compact Disc (Except Software), Tape, and Record Reproducing**

This U.S. industry comprises establishments primarily engaged in mass reproducing audio and video material on magnetic or optical media. Examples of products mass reproduced by these establishments are audio compact discs, prerecorded audio and video cassettes, and laser discs.

The data published with NAICS code 334612 include the following SIC industries:

3652 Prerecorded records and tapes

7819 Services allied to motion pictures (pt)

##### **334613 Magnetic and Optical Recording Media Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing magnetic and optical recording media, such as blank magnetic tape, blank diskettes, blank optical discs, hard drive media, and blank magnetic tape cassettes.

The data published with NAICS code 334613 include the following SIC industry:

3695 Magnetic and optical recording media

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 334613 do not include establishments primarily engaged in the manufacture of magnetic tape cleaners. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **335 Electrical Equipment, Appliance, and Component Manufacturing**

Industries in the Electrical Equipment, Appliance, and Component Manufacturing subsector manufacture products that generate, distribute and use electrical power. Electric lighting equipment manufacturing establishments produce electric lamp bulbs, lighting fixtures, and parts. Household appliance manufacturing establishments make both small and major electrical appliances and parts. Electrical equipment manufacturing establishments make goods, such as electric motors, generators, transformers, and switchgear apparatus. Other electrical equipment and component manufacturing establishments make devices for storing electrical power (e.g., batteries), for transmitting electricity (e.g., insulated wire), and wiring devices (e.g., electrical outlets, fuse boxes, and light switches).

#### **3351 Electric Lighting Equipment Manufacturing**

This NAICS industry group includes establishments classified in the following NAICS Industries: 33511, Electric Lamp Bulb and Parts Manufacturing; and 33512, Lighting Fixture Manufacturing.

##### **33511 Electric Lamp Bulb and Parts Manufacturing**

This industry comprises establishments primarily engaged in manufacturing electric light bulbs and tubes, and parts and components (except glass blanks for electric light bulbs).

##### **335110 Electric Lamp Bulb and Part Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing electric light bulbs and tubes, and parts and components (except glass blanks for electric light bulbs).

The data published with NAICS code 335110 include the following SIC industry:

3641 Electric lamps

##### **33512 Lighting Fixture Manufacturing**

This industry comprises establishments primarily engaged in manufacturing electric lighting fixtures (except vehicular), nonelectric lighting equipment, lamp shades (except glass and plastics) and lighting fixture components (except current-carrying wiring devices).

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### **335121 Residential Electric Lighting Fixture Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing fixed or portable residential electric lighting fixtures and lamp shades of metal, paper, or textiles. Residential electric lighting fixtures include those for use both inside and outside the residence.

The data published with NAICS code 335121 include the following SIC industries:

- 3089 Plastics products, n.e.c. (pt)
- 3645 Residential lighting fixtures
- 3999 Manufacturing industries, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 335121 include establishments primarily engaged in the manufacture of plastic lampshades. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **335122 Commercial, Industrial, and Institutional Electric Lighting Fixture Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing commercial, industrial, and institutional electric lighting fixtures.

The data published with NAICS code 335122 include the following SIC industry:

- 3646 Commercial lighting fixtures

### **335129 Other Lighting Equipment Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing electric lighting fixtures (except residential, commercial, industrial, institutional, and vehicular electric lighting fixtures) and nonelectric lighting equipment.

The data published with NAICS code 335129 include the following SIC industries:

- 3648 Lighting equipment, n.e.c.
- 3699 Electrical equipment and supplies, n.e.c. (pt)

### **3352 Household Appliance Manufacturing**

This NAICS industry group includes establishments classified in the following NAICS Industries: 33521, Small Electrical Appliance Manufacturing; and 33522, Major Appliance Manufacturing.

#### **33521 Small Electrical Appliance Manufacturing**

This industry comprises establishments primarily engaged in manufacturing small electric appliances and electric housewares, household-type fans, household-type vacuum cleaners, and other electric household-type floor care machines.

#### **335211 Electric Housewares and Household Fan Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing small electric appliances and electric housewares for heating, cooking, and other purposes, and electric household-type fans (except attic fans).

The data published with NAICS code 335211 include the following SIC industry:

- 3634 Electric housewares and fans (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 335211 do not include establishments primarily engaged in the manufacture of electric hair clippers for humans. The NAICS definitions will be fully implemented with the 2002 Economic Census.

#### **335212 Household Vacuum Cleaner Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing electric vacuum cleaners, electric floor waxing machines, and other electric floor care machines typically for household use.

The data published with NAICS code 335212 include the following SIC industries:

- 3635 Household vacuum cleaners
- 3639 Household appliances, n.e.c. (pt)

#### **33522 Major Appliance Manufacturing**

This industry comprises establishments primarily engaged in manufacturing household-type cooking appliances, household-type laundry equipment, household-type refrigerators, upright and chest freezers, and other electrical and nonelectrical major household-type appliances, such as dishwashers, water heaters, and garbage disposal units.

#### **335221 Household Cooking Appliance Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing household-type electric and nonelectric cooking equipment (except small electric appliances and electric housewares).

The data published with NAICS code 335221 include the following SIC industry:

- 3631 Household cooking equipment

#### **335222 Household Refrigerator and Home Freezer Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing household-type refrigerators and upright and chest freezers.

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The data published with NAICS code 335222 include the following SIC industry:

3632 Household refrigerators and freezers

### **335224 Household Laundry Equipment Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing household-type laundry equipment.

The data published with NAICS code 335224 include the following SIC industry:

3633 Household laundry equipment

### **335228 Other Major Household Appliance Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing electric and nonelectric major household-type appliances (except cooking equipment, refrigerators, upright and chest freezers, and household-type laundry equipment).

The data published with NAICS code 335228 include the following SIC industry:

3639 Household appliances, n.e.c. (pt)

### **3353 Electrical Equipment Manufacturing**

This NAICS industry group includes establishments classified in NAICS Industry 33531, Electrical Equipment Manufacturing.

#### **33531 Electrical Equipment Manufacturing**

This industry comprises establishments primarily engaged in manufacturing power, distribution, and specialty transformers; electric motors, generators, and motor generator sets; switchgear and switchboard apparatus; relays; and industrial controls.

#### **335311 Power, Distribution, and Specialty Transformer Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing power, distribution, and specialty transformers (except electronic components). Industrial-type and consumer-type transformers in this industry vary (e.g., step up or step down) voltage but do not convert alternating to direct or direct to alternating current.

The data published with NAICS code 335311 include the following SIC industries:

3548 Welding apparatus (pt)

3612 Transformers

#### **335312 Motor and Generator Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing electric motors (except internal combustion engine starting motors), power generators (except battery charging alternators for internal combustion engines), and motor generator sets (except turbine generator set units). This industry includes establishments rewinding armatures on a factory basis.

The data published with NAICS code 335312 include the following SIC industries:

3621 Motors and generators

7694 Armature rewinding shops (pt)

#### **335313 Switchgear and Switchboard Apparatus Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing switchgear and switchboard apparatus.

The data published with NAICS code 335313 include the following SIC industry:

3613 Switchgear and switchboard apparatus

#### **335314 Relay and Industrial Control Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing relays, motor starters and controllers, and other industrial controls and control accessories.

The data published with NAICS code 335314 include the following SIC industry:

3625 Relays and industrial controls

#### **3359 Other Electrical Equipment and Component Manufacturing**

This industry group comprises establishments manufacturing electrical equipment and components (except electric lighting equipment, household-type appliances, transformers, switchgear, relays, motors, and generators).

#### **33591 Battery Manufacturing**

This industry comprises establishments primarily engaged in manufacturing primary and storage batteries.

#### **335911 Storage Battery Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing storage batteries.

The data published with NAICS code 335911 include the following SIC industry:

3691 Storage batteries

### **335912 Primary Battery Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing wet or dry primary batteries.

The data published with NAICS code 335912 include the following SIC industry:

3692 Primary batteries, dry and wet

### **33592 Communication and Energy Wire and Cable Manufacturing**

This industry comprises establishments insulating fiber-optic cable, and manufacturing insulated nonferrous wire and cable from nonferrous wire drawn in other establishments.

### **335921 Fiber Optic Cable Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing insulated fiber-optic cable from purchased fiber-optic strand.

The data published with NAICS code 335921 include the following SIC industry:

3357 Nonferrous wire drawing and insulating (pt)

### **335929 Other Communication and Energy Wire Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing insulated wire and cable of nonferrous metals from purchased wire.

The data published with NAICS code 335929 include the following SIC industry:

3357 Nonferrous wire drawing and insulating (pt)

### **33593 Wiring Device Manufacturing**

This industry comprises establishments primarily engaged in manufacturing current-carrying wiring devices and noncurrent-carrying wiring devices for wiring electrical circuits.

### **335931 Current-Carrying Wiring Device Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing current-carrying wiring devices.

The data published with NAICS code 335931 include the following SIC industry:

3643 Current-carrying wiring devices

### **335932 Noncurrent-Carrying Wiring Device Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing noncurrent-carrying wiring devices.

The data published with NAICS code 335932 include the following SIC industry:

3644 Noncurrent-carrying wiring devices

### **33599 All Other Electrical Equipment and Component Manufacturing**

This industry comprises establishments primarily engaged in manufacturing electrical equipment (except electric lighting equipment, household-type appliances, transformers, motors, generators, switchgear, relays, industrial controls, batteries, communication and energy wire and cable, and wiring devices).

### **335991 Carbon and Graphite Product Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing carbon, graphite, and metal-graphite brushes and brush stock; carbon or graphite electrodes for thermal and electrolytic uses; carbon and graphite fibers; and other carbon, graphite, and metal-graphite products.

The data published with NAICS code 335991 include the following SIC industry:

3624 Carbon and graphite products

### **335999 All Other Miscellaneous Electrical Equipment and Component Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing industrial and commercial electric apparatus and other equipment (except lighting equipment, household appliances, transformers, motors, generators, switchgear, relays, industrial controls, batteries, communication and energy wire and cable, wiring devices, and carbon and graphite products). This industry includes power converters (i.e., AC to DC and DC to AC), power supplies, surge suppressors, and similar equipment for industrial-type and consumer-type equipment.

The data published with NAICS code 335999 include the following SIC industries:

3629 Electrical industrial apparatus, n.e.c.

3699 Electrical equipment and supplies, n.e.c. (pt)

### **336 Transportation Equipment Manufacturing**

Industries in the Transportation Equipment Manufacturing subsector produce equipment for transporting people and goods. Transportation equipment is a type of machinery. An entire subsector is devoted to this activity because of the significance of its economic size in all three North American countries.

Establishments in this subsector utilize production processes similar to those of other machinery manufacturing establishments - bending, forming, welding, machining, and assembling metal or plastic parts into components and finished products. However, the assembly of components and subassemblies and their further assembly into finished vehicles tends to be a more common production process in this subsector than in the Machinery Manufacturing subsector.

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NAICS has industry groups for the manufacture of equipment for each mode of transport - road, rail, air, and water. Parts for motor vehicles warrant a separate industry group because of their importance and because parts manufacture requires less assembly, and the establishments that manufacture only parts are not as vertically integrated as those that make complete vehicles.

Land use motor vehicle equipment not designed for highway operation (e.g., agricultural equipment, construction equipment, and materials handling equipment) is classified in the appropriate NAICS subsector based on the type and use of the equipment.

### **3361 Motor Vehicle Manufacturing**

This NAICS industry group includes establishments classified in the following NAICS Industries: 33611, Automobile and Light Duty Motor Vehicle Manufacturing; and 33612, Heavy Duty Truck Manufacturing.

#### **33611 Automobile and Light Duty Motor Vehicle Manufacturing**

This industry comprises establishments primarily engaged in (1) manufacturing complete automobile and light duty motor vehicles (i.e., body and chassis or unibody) or (2) manufacturing chassis only.

##### **336111 Automobile Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) manufacturing complete automobiles (i.e., body and chassis or unibody) or (2) manufacturing automobile chassis only.

The data published with NAICS code 336111 include the following SIC industry:

3711 Motor vehicles and car bodies (pt)

##### **336112 Light Truck and Utility Vehicle Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) manufacturing complete light trucks and utility vehicles (i.e., body and chassis) or (2) manufacturing light truck and utility vehicle chassis only. Vehicles made include light duty vans, pick-up trucks, minivans, and sport utility vehicles.

The data published with NAICS code 336112 include the following SIC industry:

3711 Motor vehicles and car bodies (pt)

### **33612 Heavy Duty Truck Manufacturing**

This industry comprises establishments primarily engaged in (1) manufacturing heavy duty truck chassis and assembling complete heavy duty trucks, buses, heavy duty motor homes, and other special-purpose, heavy duty motor vehicles for highway use or (2) manufacturing heavy duty truck chassis only.

### **336120 Heavy Duty Truck Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) manufacturing heavy duty truck chassis and assembling complete heavy duty trucks, buses, heavy duty motor homes, and other special-purpose, heavy duty motor vehicles for highway use or (2) manufacturing heavy duty truck chassis only.

The data published with NAICS code 336120 include the following SIC industry:

3711 Motor vehicles and car bodies (pt)

### **3362 Motor Vehicle Body and Trailer Manufacturing**

This NAICS industry group includes establishments classified in NAICS Industry 33621, Motor Vehicle Body and Trailer Manufacturing.

#### **33621 Motor Vehicle Body and Trailer Manufacturing**

This industry comprises establishments primarily engaged in (1) manufacturing motor vehicle bodies and cabs or (2) manufacturing truck, automobile and utility trailers, truck trailer chassis, detachable trailer bodies and detachable trailer chassis. The products made may be sold separately or may be assembled on purchased chassis and sold as complete vehicles.

Motor homes are units where the motor and the living quarters are contained in the same integrated unit, while travel trailers are designed to be towed by a motor unit, such as an automobile or a light truck.

##### **336211 Motor Vehicle Body Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing truck and bus bodies and cabs and automobile bodies. The products made may be sold separately or may be assembled on purchased chassis and sold as complete vehicles.

The data published with NAICS code 336211 include the following SIC industries:

3711 Motor vehicles and car bodies (pt)

3713 Truck and bus bodies

3714 Motor vehicle parts and accessories (pt)

##### **336212 Truck Trailer Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing truck trailers, truck trailer chassis, cargo container chassis, detachable trailer bodies, and detachable trailer chassis for sale separately.

The data published with NAICS code 336212 include the following SIC industry:

3715 Truck trailers

### **336213 Motor Home Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) manufacturing motor homes on purchased chassis and/or (2) manufacturing conversion vans on an assembly line basis. Motor homes are units where the motor and the living quarters are integrated in the same unit.

The data published with NAICS code 336213 include the following SIC industry:

3716 Motor homes

### **336214 Travel Trailer and Camper Manufacturing**

This U.S. industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing travel trailers and campers designed to attach to motor vehicles; (2) manufacturing pickup coaches (i.e., campers) and caps (i.e., covers) for mounting on pickup trucks; and (3) manufacturing automobile, utility, and light-truck trailers. Travel trailers do not have their own motor but are designed to be towed by a motor unit, such as an automobile or a light truck.

The data published with NAICS code 336214 include the following SIC industries:

3792 Travel trailer and campers

3799 Transportation equipment, n.e.c. (pt)

### **3363 Motor Vehicle Parts Manufacturing**

This NAICS industry group includes establishments classified in the following NAICS Industries: 33631, Motor Vehicle Gasoline Engine and Engine Parts Manufacturing; 33632, Motor Vehicle Electrical and Electronic Equipment Manufacturing; 33633, Motor Vehicle Steering and Suspension Component (Except Spring) Manufacturing; 33634, Motor Vehicle Brake System Manufacturing; 33635, Motor Vehicle Transmission and Power Train Parts Manufacturing; 33636, Motor Vehicle Seating and Interior Trim Manufacturing; 33637, Motor Vehicle Metal Stamping; and 33639, Other Motor Vehicle Parts Manufacturing.

#### **33631 Motor Vehicle Gasoline Engine and Engine Parts Manufacturing**

This industry comprises establishments primarily engaged in manufacturing and/or rebuilding motor vehicle gasoline engines and engine parts, whether or not for vehicular use.

#### **336311 Carburetor, Piston, Piston Ring, and Valve Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing and/or rebuilding carburetors, pistons, piston rings, and engine intake and exhaust valves.

The data published with NAICS code 336311 include the following SIC industries:

3592 Carburetors, pistons, rings, and valves

#### **336312 Gasoline Engine and Engine Parts Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing and/or rebuilding gasoline motor vehicle engines and gasoline motor vehicle engine parts, excluding carburetors, pistons, piston rings, and valves.

The data published with NAICS code 336312 include the following SIC industry:

3714 Motor vehicle parts and accessories (pt)

#### **33632 Motor Vehicle Electrical and Electronic Equipment Manufacturing**

This industry comprises establishments primarily engaged in (1) manufacturing vehicular lighting and/or (2) manufacturing and/or rebuilding motor vehicle electrical and electronic equipment. The products made can be used for all types of transportation equipment (i.e., aircraft, automobiles, trains, ships).

#### **336321 Vehicular Lighting Equipment Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing vehicular lighting fixtures.

The data published with NAICS code 336321 include the following SIC industry:

3647 Vehicular lighting equipment

#### **336322 Other Motor Vehicle Electrical and Electronic Equipment Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing and/or rebuilding electrical and electronic equipment for motor vehicles and internal combustion engines.

The data published with NAICS code 336322 include the following SIC industries:

3679 Electronic components, n.e.c. (pt)

3694 Engine electrical equipment

3714 Motor vehicle parts and accessories (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 336322 include establishments primarily engaged in the manufacture of electronic control modular chips for motor vehicles. The NAICS definitions will be fully implemented with the 2002 Economic Census.

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### **33633 Motor Vehicle Steering and Suspension Component (Except Spring) Manufacturing**

This industry comprises establishments primarily engaged in manufacturing and/or rebuilding motor vehicle steering mechanisms and suspension components (except springs).

### **336330 Motor Vehicle Steering and Suspension Component (Except Spring) Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing and/or rebuilding motor vehicle steering mechanisms and suspension components (except springs).

The data published with NAICS code 336330 include the following SIC industry:

3714 Motor vehicle parts and accessories (pt)

### **33634 Motor Vehicle Brake System Manufacturing**

This industry comprises establishments primarily engaged in manufacturing and/or rebuilding motor vehicle brake systems and related components.

### **336340 Motor Vehicle Brake System Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing and/or rebuilding motor vehicle brake systems and related components.

The data published with NAICS code 336340 include the following SIC industries:

3292 Asbestos products (pt)

3714 Motor vehicle parts and accessories (pt)

### **33635 Motor Vehicle Transmission and Power Train Parts Manufacturing**

This industry comprises establishments primarily engaged in manufacturing and/or rebuilding motor vehicle transmission and power train parts.

### **336350 Motor Vehicle Transmission and Power Train Parts Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing and/or rebuilding motor vehicle transmission and power train parts.

The data published with NAICS code 336350 include the following SIC industry:

3714 Motor vehicle parts and accessories (pt)

### **33636 Motor Vehicle Seating and Interior Trim Manufacturing**

This industry comprises establishments primarily engaged in manufacturing motor vehicle seating, seats, seat frames, seat belts, and interior trimmings.

### **336360 Motor Vehicle Seating and Interior Trim Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing motor vehicle seating, seats, seat frames, seat belts, and interior trimmings.

The data published with NAICS code 336360 include the following SIC industries:

2396 Automotive and apparel trimmings (pt)

2399 Fabricated textile products, n.e.c. (pt)

2531 Public building and related furniture (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 336360 do not include establishments primarily engaged in the manufacture of metal motor vehicle seat frames. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **33637 Motor Vehicle Metal Stamping**

This industry comprises establishments primarily engaged in manufacturing motor vehicle stampings, such as fenders, tops, body parts, trim, and molding.

### **336370 Motor Vehicle Metal Stamping**

This U.S. industry comprises establishments primarily engaged in manufacturing motor vehicle stampings, such as fenders, tops, body parts, trim, and molding.

The data published with NAICS code 336370 include the following SIC industry:

3465 Automotive stampings

### **33639 Other Motor Vehicle Parts Manufacturing**

This industry comprises establishments primarily engaged in manufacturing and/or rebuilding motor vehicle parts and accessories (except motor vehicle gasoline engines and engine parts, motor vehicle electrical and electronic equipment, motor vehicle steering and suspension components, motor vehicle brake systems, motor vehicle transmission and power train parts, motor vehicle seating and interior trim, and motor vehicle stampings).

### **336391 Motor Vehicle Air-Conditioning Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing air-conditioning systems and compressors for motor vehicles, such as automobiles, trucks, buses, aircraft, farm machinery, construction machinery, and other related vehicles.

The data published with NAICS code 336391 include the following SIC industry:

3585 Refrigeration and heating equipment (pt)

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### **336399 All Other Motor Vehicle Parts Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing and/or rebuilding motor vehicle parts and accessories (except motor vehicle gasoline engines and engine parts, motor vehicle electrical and electronic equipment, motor vehicle steering and suspension components, motor vehicle brake systems, motor vehicle transmission and power train parts, motor vehicle seating and interior trim, motor vehicle stampings, and motor vehicle air-conditioning systems and compressors).

The data published with NAICS code 336399 include the following SIC industries:

3519 Internal combustion engines, n.e.c. (pt)

3714 Motor vehicle parts and accessories (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 336399 do not include establishments primarily engaged in the manufacture of luggage and utility racks or trailer hitches. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **3364 Aerospace Product and Parts Manufacturing**

This NAICS industry group includes establishments classified in NAICS Industry 33641, Aerospace Product and Parts Manufacturing.

#### **33641 Aerospace Product and Parts Manufacturing**

This industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing complete aircraft, missiles, or space vehicles; (2) manufacturing aerospace engines, propulsion units, auxiliary equipment or parts; (3) developing and making prototypes of aerospace products; (4) aircraft conversion (i.e., major modifications to systems); and (5) complete aircraft or propulsion systems overhaul and rebuilding (i.e., periodic restoration of aircraft to original design specifications).

##### **336411 Aircraft Manufacturing**

This U.S. industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing or assembling complete aircraft; (2) developing and making aircraft prototypes; (3) aircraft conversion (i.e., major modifications to systems); and (4) complete aircraft overhaul and rebuilding (i.e., periodic restoration of aircraft to original design specifications).

The data published with NAICS code 336411 include the following SIC industry:

3721 Aircraft

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 336411 do not include establishments primarily engaged in the manufacture of target drones. The NAICS definitions will be fully implemented with the 2002 Economic Census.

##### **336412 Aircraft Engine and Engine Parts Manufacturing**

This U.S. industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing aircraft engines and engine parts; (2) developing and making prototypes of aircraft engines and engine parts; (3) aircraft propulsion system conversion (i.e., major modifications to systems); and (4) aircraft propulsion systems overhaul and rebuilding (i.e., periodic restoration of aircraft propulsion system to original design specifications).

The data published with NAICS code 336412 include the following SIC industry:

3724 Aircraft engines and engine parts

##### **336413 Other Aircraft Parts and Auxiliary Equipment Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) manufacturing aircraft parts or auxiliary equipment (except engines and aircraft fluid power subassemblies) and/or (2) developing and making prototypes of aircraft parts and auxiliary equipment. Auxiliary equipment includes such items as crop dusting apparatus, armament racks, inflight refueling equipment, and external fuel tanks.

The data published with NAICS code 336413 include the following SIC industry:

3728 Aircraft parts and equipment, n.e.c. (pt)

##### **336414 Guided Missile and Space Vehicle Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) manufacturing complete guided missiles and space vehicles and/or (2) developing and making prototypes of guided missile or space vehicles.

The data published with NAICS code 336414 include the following SIC industry:

3761 Guided missiles and space vehicles

##### **336415 Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) manufacturing guided missile and/or space vehicle propulsion units and propulsion unit parts and/or (2) developing and making prototypes of guided missile and space vehicle propulsion units and propulsion unit parts.



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The data published with NAICS code 336415 include the following SIC industry:

3764 Space propulsion units and parts

### **336419 Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) manufacturing guided missile and space vehicle parts and auxiliary equipment (except guided missile and space vehicle propulsion units and propulsion unit parts) and/or (2) developing and making prototypes of guided missile and space vehicle parts and auxiliary equipment.

The data published with NAICS code 336419 include the following SIC industry:

3769 Space vehicle equipment, n.e.c.

### **3365 Railroad Rolling Stock Manufacturing**

This NAICS industry group includes establishments classified in NAICS Industry 33651, Railroad Rolling Stock Manufacturing.

#### **33651 Railroad Rolling Stock Manufacturing**

This industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing and/or rebuilding locomotives, locomotive frames and parts; (2) manufacturing railroad, street, and rapid transit cars and car equipment for operation on rails for freight and passenger service; and (3) manufacturing rail layers, ballast distributors, rail tamping equipment, and other railway track maintenance equipment.

#### **336510 Railroad Rolling Stock Manufacturing**

This U.S. industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing and/or rebuilding locomotives, locomotive frames, and parts; (2) manufacturing railroad, street, and rapid transit cars and car equipment for operation on rails for freight and passenger service; and (3) manufacturing rail layers, ballast distributors, rail tamping equipment, and other railway track maintenance equipment.

The data published with NAICS code 336510 include the following SIC industries:

3531 Construction machinery (pt)

3743 Railroad equipment (pt)

### **3366 Ship and Boat Building**

This NAICS industry group includes establishments classified in NAICS Industry 33661, Ship and Boat Building.

### **33661 Ship and Boat Building**

This industry comprises establishments primarily engaged in operating shipyards or boat yards (i.e., ship or boat manufacturing facilities). Shipyards are fixed facilities with drydocks and fabrication equipment capable of building a ship, defined as watercraft typically suitable or intended for other than personal or recreational use. Boats are defined as watercraft typically suitable or intended for personal use. Activities of shipyards include the construction of ships, their repair, conversion and alteration, the production of prefabricated ship and barge sections, and specialized services, such as ship scaling.

#### **336611 Ship Building and Repairing**

This U.S. industry comprises establishments primarily engaged in operating a shipyard. Shipyards are fixed facilities with drydocks and fabrication equipment capable of building a ship, defined as watercraft typically suitable or intended for other than personal or recreational use. Activities of shipyards include the construction of ships, their repair, conversion and alteration, the production of prefabricated ship and barge sections, and specialized services, such as ship scaling.

The data published with NAICS code 336611 include the following SIC industry:

3731 Ship building and repairing

#### **336612 Boat Building**

This U.S. industry comprises establishments primarily engaged in building boats. Boats are defined as watercraft not built in shipyards and typically of the type suitable or intended for personal use.

The data published with NAICS code 336612 include the following SIC industry:

3732 Boat building and repairing (pt)

### **3369 Other Transportation Equipment Manufacturing**

This industry group comprises establishments primarily engaged in manufacturing transportation equipment (except motor vehicles and parts, aerospace products and parts, railroad rolling stock, ship building, and boat manufacturing).

#### **33699 Other Transportation Equipment Manufacturing**

This industry comprises establishments primarily engaged in manufacturing motorcycles, bicycles, metal tricycles, complete military armored vehicles, tanks, self-propelled weapons, vehicles pulled by draft animals, and other transportation equipment (except motor vehicles, boats, ships, railroad rolling stock, and aerospace products), including parts thereof.

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### **336991 Motorcycle, Bicycle, and Parts Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing motorcycles, bicycles, tricycles and similar equipment and parts.

The data published with NAICS code 336991 include the following SIC industries:

3751 Motorcycles, bicycles, and parts

3944 Games, toys, and children's vehicles (pt)

### **336992 Military Armored Vehicle, Tank, and Tank Component Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing complete military armored vehicles, combat tanks, specialized components for combat tanks, and self-propelled weapons.

The data published with NAICS code 336992 include the following SIC industries:

3711 Motor vehicles and car bodies (pt)

3795 Tanks and tank components

### **336999 All Other Transportation Equipment Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing transportation equipment (except motor vehicles, motor vehicle parts, boats, ships, railroad rolling stock, aerospace products, motorcycles, bicycles, armored vehicles, and tanks).

The data published with NAICS code 336999 include the following SIC industry:

3799 Transportation equipment, n.e.c. (pt)

### **337 Furniture and Related Product Manufacturing**

Industries in the Furniture and Related Product Manufacturing subsector make furniture and related articles, such as mattresses, window blinds, cabinets, and fixtures. The processes used in the manufacture of furniture include the cutting, bending, molding, laminating, and assembly of such materials as wood, metal, glass, plastics, and rattan. However, the production process for furniture is not solely bending metal, cutting and shaping wood, or extruding and molding plastics. Design and fashion trends play an important part in the production of furniture. The integrated design of the article for both esthetic and functional qualities is also a major part of the process of manufacturing furniture. Design services may be performed by the furniture establishment's work force or may be purchased from industrial designers.

Furniture may be made of any material, but the most common ones used in North America are metal and wood. Furniture manufacturing establishments may specialize in making articles primarily from one material. Some of the

equipment required to make a wooden table, for example, is different from that used to make a metal one. However, furniture is usually made from several materials. A wooden table might have metal brackets, and a wooden chair, a fabric or plastics seat. Therefore, in NAICS, furniture initially is classified based on the type of furniture (application for which it is designed) rather than the material used. For example, an upholstered sofa is treated as household furniture, although it may also be used in hotels or offices.

When classifying furniture according to the component material from which it is made, furniture made from more than one material is classified based on the material used in the frame, or if there is no frame, the predominant component material. Upholstered household furniture (excluding kitchen and dining room chairs with upholstered seats) is classified without regard to the frame material. Kitchen or dining room chairs with upholstered seats are classified according to the frame material.

Furniture may be made on a stock or custom basis and may be shipped assembled or unassembled (i.e., knock-down). The manufacture of furniture parts and frames is included in this subsector.

Some of the processes used in furniture manufacturing are similar to processes that are used in other segments of manufacturing. For example, cutting and assembly occurs in the production of wood trusses that are classified in Subsector 321, Wood Product Manufacturing. However, the multiple processes that distinguish wood furniture manufacturing from wood product manufacturing warrant inclusion of wooden furniture manufacturing in the Furniture and Related Product Manufacturing subsector. Metal furniture manufacturing uses techniques that are also employed in the manufacturing of roll-formed products classified in Subsector 332, Fabricated Metal Product Manufacturing. The molding process for plastics furniture is similar to the molding of other plastics products. However, plastics furniture producing establishments tend to specialize in furniture.

NAICS attempts to keep furniture manufacturing together, but there are two notable exceptions: seating for transportation equipment and laboratory and hospital furniture. These exceptions are related to that fact that some of the aspects of the production process for these products, primarily the design, are highly integrated with that of other manufactured goods, namely motor vehicles and health equipment.

### **3371 Household and Institutional Furniture and Kitchen Cabinet Manufacturing**

This industry group comprises establishments manufacturing household-type furniture, such as living room, kitchen, and bedroom furniture, and institutional (i.e., public building) furniture, such as furniture for schools, theaters, and churches.

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### **33711 Wood Kitchen Cabinet and Countertop Manufacturing**

This industry comprises establishments primarily engaged in manufacturing wood or plastics laminated on wood kitchen cabinets, bathroom vanities, and countertops (except freestanding). The cabinets and counters may be made on a stock or custom basis.

### **337110 Wood Kitchen Cabinet and Countertop Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing wood or plastics laminated on wood kitchen cabinets, bathroom vanities, and countertops (except freestanding). The cabinets and counters may be made on a stock or custom basis.

The data published with NAICS code 3371110 include the following SIC industries:

2434 Wood kitchen cabinets

2541 Wood partitions and fixtures (pt)

5712 Furniture stores (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 337110 include establishments primarily engaged in manufacturing wood countertops as part of wood office and store fixtures. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **33712 Household and Institutional Furniture Manufacturing**

This industry comprises establishments primarily engaged in manufacturing household-type and public building furniture (i.e., library, school, theater, and church furniture). The furniture may be made on a stock or custom basis and may be assembled or unassembled (i.e., knockdown).

### **337121 Upholstered Household Furniture Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing upholstered household-type furniture. The furniture may be made on a stock or custom basis.

The data published with NAICS code 337121 include the following SIC industries:

2512 Upholstered household furniture

2515 Mattresses and bedsprings (pt)

5712 Furniture stores (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 337121 do not include establishments primarily engaged in manufacturing upholstered metal household furniture. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **337122 Nonupholstered Wood Household Furniture Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing nonupholstered wood household-type furniture and freestanding cabinets (except television, radio, and sewing machine cabinets). The furniture may be made on a stock or custom basis and may be assembled or unassembled (i.e., knockdown).

The data published with NAICS code 337122 include the following SIC industries:

2511 Wood household furniture

5712 Furniture stores (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 337122 include establishments primarily engaged in manufacturing wood box spring frames. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **337124 Metal Household Furniture Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing metal household-type furniture and freestanding cabinets. The furniture may be made on a stock or custom basis and may be assembled or unassembled (i.e., knockdown).

The data published with NAICS code 337124 include the following SIC industry:

2514 Metal household furniture

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 337124 include establishments primarily engaged in manufacturing upholstered metal household furniture or metal box spring frames. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **337125 Household Furniture (Except Wood and Metal) Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing household-type furniture of materials other than wood or metal, such as plastics, reed,

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rattan, wicker, and fiberglass. The furniture may be made on a stock or custom basis and may be assembled or unassembled (i.e., knockdown).

The data published with NAICS code 337125 include the following SIC industry:

2519 Household furniture, n.e.c.

### **337127 Institutional Furniture Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing institutional-type furniture (e.g., library, school, theater, and church furniture). The furniture may be made on a stock or custom basis and may be assembled or unassembled (i.e., knockdown).

The data published with NAICS code 337127 include the following SIC industries:

2531 Public building and related furniture (pt)

2599 Furniture and fixtures, n.e.c. (pt)

3952 Lead pencils and art goods (pt)

3999 Manufacturing industries, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 337127 do not include establishments primarily engaged in manufacturing wood or nonwood lunchroom tables and chairs. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **337129 Wood Television, Radio, and Sewing Machine Cabinet Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing wood cabinets used as housings by television, stereo, loudspeaker, and sewing machine manufacturers.

The data published with NAICS code 337129 include the following SIC industry:

2517 Wood TV and radio cabinets

### **3372 Office Furniture (Including Fixtures) Manufacturing**

This NAICS industry group includes establishments classified in NAICS Industry 33721, Office Furniture (Including Fixtures) Manufacturing.

### **33721 Office Furniture (Including Fixtures) Manufacturing**

This industry comprises establishments primarily engaged in manufacturing office furniture and/or office and store fixtures. The furniture may be made on a stock or custom basis and may be assembled or unassembled (i.e., knockdown).

### **337211 Wood Office Furniture Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing wood office-type furniture. The furniture may be made on a stock or custom basis and may be assembled or unassembled (i.e., knockdown).

The data published with NAICS code 337211 include the following SIC industry:

2521 Wood office furniture

### **337212 Custom Architectural Woodwork and Millwork Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing custom designed interiors consisting of architectural woodwork and fixtures utilizing wood, wood products, and plastics laminates. All of the industry output is made to individual order on a job shop basis and requires skilled craftsmen as a labor input. A job might include custom manufacturing of display fixtures, gondolas, wall shelving units, entrance and window architectural detail, sales and reception counters, wall paneling, and matching furniture.

The data published with NAICS code 337212 include the following SIC industry:

2541 Wood partitions and fixtures (pt)

### **337214 Office Furniture (Except Wood) Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing nonwood office-type furniture. The furniture may be made on a stock or custom basis and may be assembled or unassembled (i.e., knockdown).

The data published with NAICS code 337214 include the following SIC industry:

2522 Office furniture, except wood

### **337215 Showcase, Partition, Shelving, and Locker Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing wood and nonwood office and store fixtures, shelving, lockers, frames, partitions, and related fabricated products of wood and nonwood materials, including plastics laminated fixture tops. The products are made on a stock basis and may be assembled or unassembled (i.e., knockdown). Establishments exclusively making furniture parts (e.g., frames) are included in this industry.

The data published with NAICS code 337215 include the following SIC industries:

2426 Hardwood dimension and flooring mills (pt)

2541 Wood partitions and fixtures (pt)

2542 Partitions and fixtures, except wood

3499 Fabricated metal products, n.e.c. (pt)

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This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 337215 include establishments primarily engaged in manufacturing wood or non-wood lunchroom tables and chairs, but do not include establishments primarily engaged in manufacturing wood or metal box spring frames, finished plastic furniture parts, convertible bed sleeper mechanisms or chair glides. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **3379 Other Furniture Related Product Manufacturing**

This industry group comprises establishments manufacturing furniture related products, such as mattresses, blinds, and shades.

#### **33791 Mattress Manufacturing**

This industry comprises establishments primarily engaged in manufacturing innerspring, box spring, and noninnerspring mattresses, including mattresses for waterbeds.

#### **337910 Mattress Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing innerspring, box spring, and noninnerspring mattresses, including mattresses for waterbeds.

The data published with NAICS code 337910 include the following SIC industry:

2515 Mattresses and bedsprings (pt)

#### **33792 Blind and Shade Manufacturing**

This industry comprises establishments primarily engaged in manufacturing one or more of the following: venetian blinds, other window blinds, shades; curtain and drapery rods, poles; and/or curtain and drapery fixtures. The blinds and shades may be made on a stock or custom basis and may be made of any material.

#### **337920 Blind and Shade Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing one or more of the following: venetian blinds, other window blinds, shades; curtain and drapery rods, poles; and/or curtain and drapery fixtures. The blinds and shades may be made on a stock or custom basis and may be made of any material.

The data published with NAICS code 337920 include the following SIC industry:

2591 Drapery hardware, blinds, and shades

### **339 Miscellaneous Manufacturing**

Industries in the Miscellaneous Manufacturing subsector make a wide range of products that cannot readily be classified in specific NAICS subsectors in manufacturing. Processes used by these establishments vary significantly, both among and within industries. For example, a variety of manufacturing processes are used in manufacturing sporting and athletic goods that include products, such as tennis racquets and golf balls. The processes for these products differ from each other, and the processes differ significantly from the fabrication processes used in making dolls or toys, the melting and shaping of precious metals to make jewelry, and the bending, forming, and assembly used in making medical products.

The industries in this subsector are defined by what is made rather than how it is made. Although individual establishments might be appropriately classified elsewhere in the NAICS structure, for historical continuity, these product-based industries were maintained. In most cases, no one process or material predominates for an industry.

Establishments in this subsector manufacture products as diverse as medical equipment and supplies, jewelry, sporting goods, toys, and office supplies.

#### **3391 Medical Equipment and Supplies Manufacturing**

This NAICS industry group includes establishments classified in NAICS Industry 33911, Medical Equipment and Supplies Manufacturing.

#### **33911 Medical Equipment and Supplies Manufacturing**

This industry comprises establishments primarily engaged in manufacturing medical equipment and supplies. Examples of products made by these establishments are laboratory apparatus and furniture, surgical and medical instruments, surgical appliances and supplies, dental equipment and supplies, orthodontic goods, dentures, and orthodontic appliances.

#### **339111 Laboratory Apparatus and Furniture Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing laboratory apparatus and laboratory and hospital furniture (except dental). Examples of products made by these establishments are hospital beds, operating room tables, laboratory balances and scales, furnaces, ovens, centrifuges, cabinets, cases, benches, tables, and stools.

The data published with NAICS code 339111 include the following SIC industry:

3821 Laboratory apparatus and furniture

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This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 339111 do not include establishments primarily engaged in the manufacture of hospital beds or operating tables. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **339112 Surgical and Medical Instrument Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing medical, surgical, ophthalmic, and veterinary instruments and apparatus (except electrotherapeutic, electromedical, and irradiation apparatus). Examples of products made by these establishments are syringes, hypodermic needles, anesthesia apparatus, blood transfusion equipment, catheters, surgical clamps, and medical thermometers.

The data published with NAICS code 339112 include the following SIC industries:

3829 Measuring and controlling devices, n.e.c. (pt)

3841 Surgical and medical instruments

### **339113 Surgical Appliance and Supplies Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing surgical appliances and supplies. Examples of products made by these establishments are orthopedic devices, prosthetic appliances, surgical dressings, crutches, surgical sutures, and personal industrial safety devices (except protective eyewear).

The data published with NAICS code 339113 include the following SIC industries:

2599 Furniture and fixtures, n.e.c. (pt)

3842 Surgical appliances and supplies (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 339113 do not include establishments primarily engaged in the manufacture of rubber gloves and life jackets. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **339114 Dental Equipment and Supplies Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing dental equipment and supplies used by dental laboratories and offices of dentists, such as dental chairs, dental instrument delivery systems, dental hand instruments, and dental impression material.

The data published with NAICS code 339114 include the following SIC industries:

3699 Electrical equipment and supplies, n.e.c. (pt)

3843 Dental equipment and supplies

### **339115 Ophthalmic Goods Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing ophthalmic goods. Examples of products made by these establishments are prescription eyeglasses (except manufactured in a retail setting), contact lenses, sunglasses, eyeglass frames, and reading glasses made to standard powers.

The data published with NAICS code 339115 include the following SIC industry:

3851 Ophthalmic goods

### **339116 Dental Laboratories**

This U.S. industry comprises establishments primarily engaged in manufacturing dentures, crowns, bridges, and orthodontic appliances customized for individual application.

The data published with NAICS code 339116 include the following SIC industry:

8072 Dental laboratories

### **3399 Other Miscellaneous Manufacturing**

This NAICS industry group includes establishments classified in the following NAICS Industries: 33991, Jewelry and Silverware Manufacturing; 33992, Sporting and Athletic Goods Manufacturing; 33993, Doll, Toy, and Game Manufacturing; 33994, Office Supplies (Except Paper) Manufacturing; 33995, Sign Manufacturing; and 33999, All Other Miscellaneous Manufacturing.

### **33991 Jewelry and Silverware Manufacturing**

This industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing, engraving, chasing, or etching jewelry; (2) manufacturing metal personal goods (i.e., small articles carried on or about the person, such as compacts or cigarette cases); (3) manufacturing, engraving, chasing, or etching precious metal solid, precious metal clad, or pewter cutlery and flatware; (4) manufacturing, engraving, chasing, or etching personal metal goods (i.e., small articles carried on or about the person, such as compacts or cigarette cases); (5) stamping coins; (6) manufacturing unassembled jewelry parts and stock shop products, such as sheet, wire, and tubing; (7) cutting, slabbing, tumbling, carving, engraving, polishing, or faceting precious or semiprecious stones and gems; (8) recutting, repolishing, and setting gem stones; and (9) drilling, sawing, and peeling cultured and costume pearls.

### **339911 Jewelry (Except Costume) Manufacturing**

This U.S. industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing, engraving, chasing, or etching precious metal solid or precious metal clad jewelry; (2) manufacturing, engraving, chasing, or etching personal goods (i.e., small articles carried on or about the person, such as compacts or cigarette cases) made of precious solid or clad metal; and (3) stamping coins.

The data published with NAICS code 339911 include the following SIC industries:

3479 Metal coating and allied services (pt)

3911 Jewelry, precious metal

### **339912 Silverware and Holloware Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing, engraving, chasing, or etching precious metal solid, precious metal clad, or pewter flatware and other plated ware.

The data published with NAICS code 339912 include the following SIC industries:

3479 Metal coating and allied services (pt)

3914 Silverware and plated ware (pt)

### **339913 Jewelers' Material and Lapidary Work Manufacturing**

This U.S. industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing unassembled jewelry parts and stock shop products, such as sheet, wire, and tubing; (2) cutting, slabbing, tumbling, carving, engraving, polishing or faceting precious or semiprecious stones and gems; (3) recutting, repolishing, and setting gem stones; and (4) drilling, sawing, and peeling cultured pearls.

The data published with NAICS code 339913 include the following SIC industry:

3915 Jewelers' materials and lapidary work

### **339914 Costume Jewelry and Novelty Manufacturing**

This U.S. industry comprises establishments primarily engaged in (1) manufacturing, engraving, chasing, and etching costume jewelry; and/or (2) manufacturing, engraving, chasing, or etching nonprecious metal personal goods (i.e., small articles carried on or about the person, such as compacts or cigarette cases). This industry includes establishments primarily engaged in manufacturing precious plated jewelry and precious plated personal goods.

The data published with NAICS code 339914 include the following SIC industries:

3479 Metal coating and allied services (pt)

3499 Fabricated metal products, n.e.c. (pt)

3961 Costume jewelry

### **33992 Sporting and Athletic Goods Manufacturing**

This industry comprises establishments primarily engaged in manufacturing sporting and athletic goods (except apparel and footwear).

#### **339920 Sporting and Athletic Goods Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing sporting and athletic goods (except apparel and footwear).

The data published with NAICS code 339920 include the following SIC industry:

3949 Sporting and athletic goods, n.e.c.

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 339920 do not include establishments primarily engaged in the manufacture of wet suits. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **33993 Doll, Toy, and Game Manufacturing**

This industry comprises establishments primarily engaged in manufacturing dolls, toys, and games, such as complete dolls, doll parts, doll clothes, action figures, toys, games (including electronic), hobby kits, and children's vehicles (except metal bicycles and tricycles).

#### **339931 Doll and Stuffed Toy Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing complete dolls, doll parts, and doll clothes, action figures, and stuffed toys.

The data published with NAICS code 339931 include the following SIC industry:

3942 Dolls

#### **339932 Game, Toy, and Children's Vehicle Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing games (including electronic), toys, and children's vehicles (except bicycles and metal tricycles).

The data published with NAICS code 339932 include the following SIC industry:

3944 Games, toys, and children's vehicles (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 339932 do not include

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establishments primarily engaged in the manufacture of rubber toys, except dolls or embroidery kits. The NAICS definitions will be fully implemented with the 2002 Economic Census.

### **33994 Office Supplies (Except Paper) Manufacturing**

This industry comprises establishments primarily engaged in manufacturing office supplies. Examples of products made by these establishments are pens, pencils, felt tip markers, crayons, chalk, pencil sharpeners, staplers, hand operated stamps, modeling clay, and inked ribbons.

#### **339941 Pen and Mechanical Pencil Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing pens, ballpoint pen refills and cartridges, mechanical pencils, and felt tipped markers.

The data published with NAICS code 339941 include the following SIC industry:

3951 Pens and mechanical pencils

#### **339942 Lead Pencil and Art Goods Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing nonmechanical pencils and art goods. Examples of products made by these establishments are pencil leads, crayons, chalk, framed blackboards, pencil sharpeners, staplers, artists' palettes and paints, and modeling clay.

The data published with NAICS code 339942 include the following SIC industries:

2531 Public building and related furniture (pt)

3579 Office machines, n.e.c. (pt)

3952 Lead pencils and art goods (pt)

#### **339943 Marking Device Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing marking devices, such as hand operated stamps, embossing stamps, stamp pads, and stencils.

The data published with NAICS code 339943 include the following SIC industry:

3953 Marking devices

#### **339944 Carbon Paper and Inked Ribbon Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing carbon paper and inked ribbons.

The data published with NAICS code 339944 include the following SIC industry:

3955 Carbon paper and inked ribbons

### **33995 Sign Manufacturing**

This industry comprises establishments primarily engaged in manufacturing signs and related displays of all materials (except printing paper and paperboard signs, notices, displays).

#### **339950 Sign Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing signs and related displays of all materials (except printing paper and paperboard signs, notices, displays).

The data published with NAICS code 339950 include the following SIC industries:

3993 Signs and advertising specialties

### **33999 All Other Miscellaneous Manufacturing**

This industry comprises establishments primarily engaged in miscellaneous manufacturing (except medical equipment and supplies, jewelry and flatware, sporting and athletic goods, dolls, toys, games, office supplies (except paper), and signs).

#### **339991 Gasket, Packing, and Sealing Device Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing gaskets, packing, and sealing devices of all materials.

The data published with NAICS code 339991 include the following SIC industry:

3053 Gaskets, packing and sealing devices

#### **339992 Musical Instrument Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing musical instruments (except toys).

The data published with NAICS code 339992 include the following SIC industry:

3931 Musical instruments

#### **339993 Fastener, Button, Needle, and Pin Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing fasteners, buttons, needles, pins, and buckles (except precious metals or precious and semiprecious stones and gems).

The data published with NAICS code 339993 include the following SIC industries:

3131 Footwear cut stock and findings (pt)

3965 Fasteners, buttons, needles, and pins



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### **339994 Broom, Brush, and Mop Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing brooms, mops, and brushes.

The data published with NAICS code 339994 include the following SIC industries:

2392 Housefurnishings, n.e.c. (pt)

3991 Brooms and brushes

### **339995 Burial Casket Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing burial caskets, cases, and vaults (except concrete).

The data published with NAICS code 339995 include the following SIC industry:

3995 Burial caskets

### **339999 All Other Miscellaneous Manufacturing**

This U.S. industry comprises establishments primarily engaged in miscellaneous manufacturing (except medical

equipment and supplies, jewelry and flatware, sporting and athletic goods, dolls, toys, games, office supplies (except paper), musical instruments, fasteners, buttons, needles, pins, brooms, brushes, mops, and burial caskets).

The data published with NAICS code 339999 include the following SIC industries:

2499 Wood products, n.e.c. (pt)

3999 Manufacturing industries, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 339999 do not include establishments primarily engaged in the manufacture of electronic cigarette lighters. The NAICS definitions will be fully implemented with the 2002 Economic Census.

# Appendix C.

## Coverage and Methodology

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### MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the nsk categories.

## **INDUSTRY CLASSIFICATION OF ESTABLISHMENTS**

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

## **ESTABLISHMENT BASIS OF REPORTING**

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

## **DESCRIPTION OF THE ASM SURVEY SAMPLE**

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

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In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

**Mail stratum.** The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

**Nonmail component.** The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

## DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

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estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

### **QUALIFICATIONS OF THE ASM DATA**

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

### **DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)**

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

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census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

#### **DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS**

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

#### **VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS**

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

# Appendix D. Geographic Notes

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## **ARIZONA**

**Apache Junction** is in Maricopa and Pinal Counties.

**Queen Creek** is in Maricopa and Pinal Counties; it annexed into Pinal County in December 1993.

**Sedona** is in Coconino and Yavapai Counties.



# Appendix E. Metropolitan Areas

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## **ARIZONA**

### **Flagstaff, AZ—UT MSA**

Coconino County, AZ

Kane County, UT

### **Las Vegas, NV—AZ MSA**

Mohave County, AZ

Clark County, NV

Nye County, NV

### **Phoenix—Mesa, AZ MSA**

Maricopa County, AZ

Pinal County, AZ

### **Tucson, AZ MSA**

Pima County, AZ

### **Yuma, AZ MSA**

Yuma County, AZ

