

# Industrial Gases

## Summary

1999

Issued September 2000

MQ325C(99)-5

(Formerly Series No. MQ28C)

Information about the scope of the survey, methodology, explanation of terms and historical notes for this survey may be found in the introduction of the 1997 Manufacturing Profiles, issued August 1999.

Current data are released electronically on Internet for all individual surveys as they become available. Use: <http://www.census.gov/econ/www/manumenu.html>. Individual reports can be accessed by choosing "Current Industrial Reports (CIR's)," clicking on "Report Number Index;" from the "Industrial Products by Numeric Index," choose the survey of interest. Follow the menu to view the PDF file or to download the worksheet file (WK format) to your personal computer.

These data are also available through the U.S. Department of Commerce and STAT-USA Electronic Bulletin Board by subscription. To access, dial 202-482-3870 and follow the prompts to register. Also, you may call 202-482-1986 or 1-800-STAT-USA, for further information. The Internet address is: [www.stat-usa.gov/](http://www.stat-usa.gov/).

**SPECIAL NOTE:** The manufacturer's production of principal gases during 1999 is reported in a summary format for the first time. 1998 data were derived from the annual MA325C informa-

tion that was published for the last time in April 2000.

### Summary of Findings

For 1999, acetylene gas was 4,616 million cubic feet, a decrease of 1 percent from the 4,649 million cubic feet in 1998. Carbon dioxide liquid was 7,564 thousand short tons in 1999, a 7-percent decrease from the 8,148 thousand short tons in 1998. Argon gas increased by 1 percent to 19,657 million cubic feet in 1999, from the 19,443 million cubic feet in 1998. Hydrogen gas shipments for 1999 were 454,020 million cubic feet, an 18-percent decrease from the 551,913 million cubic feet for 1998. Nitrogen gas shipments for 1999 were 858,167 million cubic feet, a 1-percent decrease from the 870,906 million cubic feet in 1998. In 1999, oxygen gas increased by 1 percent to 685,357 million cubic feet, from the 676,332 million cubic feet in 1998.

**NOTE:** Data are now published on the new North American Industry Classification System (NAICS) basis and therefore are not always comparable to the old Standard Industrial Classification (SIC) code. For further information on NAICS, see [www.census.gov/epcd/www/naics.html](http://www.census.gov/epcd/www/naics.html).

Current  
Industrial  
Reports

Address inquiries concerning these data to Consumer Goods Industries Branch, Manufacturing and Construction Division (MCD), Washington, DC 20233-6900, or call Mary Ellickson, 301-457-4736.

For mail or fax copies of this publication, please contact the Information Services Center, MCD, Washington, DC 20233-6900, or call 301-457-4673.

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Table 1. Summary of Production of Principal Gases: 1999 and 1998  
 [Million cubic feet, except as noted]

Quarter and year	Acety- lene (3251201)	Total (3251204)	Carbon dioxide [short tons]			Argon high purity (325120D021)	Hydrogen, high and low purity (100 percent) (325120D pt.)	Nitrogen, high and low purity (100 percent) (3251207)	Oxygen, high and low purity (100 percent) (325120A)
			Gas (3251204011)	Liquid (3251204021)	Solid (3251204031)				
1999									
Total.....	4,616	13,118,187	(S)	7,563,978	(S)	19,657	454,020	858,167	685,357
First quarter.....	1,200	3,115,006	(S)	1,795,135	(S)	4,830	105,570	210,295	179,627
Second quarter.....	1,144	3,297,726	(S)	1,877,389	(S)	4,845	112,383	207,374	192,346
Third quarter.....	1,073	3,242,172	(S)	1,914,934	(S)	4,915	116,708	215,653	155,500
Fourth quarter.....	1,200	3,463,283	(S)	1,976,520	(S)	5,067	119,359	224,845	157,884
1998 1/									
Total.....	4,649	(NA)	(S)	8,147,566	283,702	19,443	551,913	870,906	676,332
First quarter.....	1,189	(NA)	(S)	2,130,009	63,396	4,841	126,543	263,532	171,001
Second quarter.....	1,152	(NA)	(S)	1,994,325	76,561	4,833	136,841	201,417	170,580
Third quarter.....	1,106	(NA)	(S)	2,072,086	72,610	4,850	141,551	202,501	168,694
Fourth quarter.....	1,202	(NA)	(S)	1,951,146	71,135	4,919	146,978	203,456	166,057

NA Not Available. S Does not meet publication standards.

1/Data are from Current Industrial Report Series MA325C(98)-1 (MA28C(98)-1), Industrial Gases, issued April 2000.

Table 2a. Quantity of Primary Production of Specified Industrial Gases: 1999  
 [Quantity in million cubic feet, unless otherwise noted]

Product code	Product description	No. of cos.	Total	First quarter	Second quarter	Third quarter	Fourth quarter
3251201	Acetylene.....	(NA)	4,616	1,200	1,144	1,073	1,200
3251201011	Produced for compression, including cylinder and pipeline.....	36	633 c/	174 c/	154 c/	140 c/	164
3251201021	Produced for pipeline shipment, excluding that shipped to be compressed, and for consumption in same plant.....	5	3,983 a/	1,025 a/	990 a/	932 a/	1,036
351204	Carbon dioxide [short tons].....	(NA)	13,118,187	3,115,006	3,297,726	3,242,172	3,463,283
3251204011	Gas, including amounts produced and liquefied.....	31	(S)	(S)	(S)	(S)	(S)
3251204021	Liquid, including amounts produced and used to make dry ice.....	19	7,563,978	1,795,135 a/	1,877,389 a/	1,914,934 a/	1,976,520
3251204031	Solid (dry ice).....	12	(S)	(S)	(S)	(S)	(S)
325120D021	Argon, high purity: Produced for cylinder and bulk delivery and pipeline shipments, and for consumption in same plant.....	19	19,657 a/	4,830 a/	4,845 a/	4,915 a/	5,067
325120D pt.	Hydrogen.....	(NA)	454,020	105,570	112,383	116,708	119,359
	Gas produced for:						
325120D031	Merchant shipment 1/.....	10	(D)	(D)	(D)	(D)	(D)
325120D041	Pipeline and on-site use 1/.....	17	(D)	(D)	(D)	(D)	(D)
325120D051	Consumption in same plant.....	30	166,994 a/	36,167 b/	39,541 a/	47,564 a/	43,723
	Liquid produced for:						
325120D061	Merchant shipment 1/.....	3	(D)	(D)	(D)	(D)	(D)
325120D071	Other shipments or uses 1/.....	2	287,025	69,403	72,842	69,144	75,636
3251207	Nitrogen.....	(NA)	858,167	210,295	207,374	215,653	224,845
	Gas produced by:						
3251207011	Cryogenic on-site and pipeline 2/.....	13	(D)	(D)	(D)	(D)	(D)
3251207021	Noncryogenic processes by industrial gas producing companies, including psa, vpsa, membrane, etc. 2/.....	1	551,664	135,777	131,863	136,987	147,037
	Captive uses for consumption in same plant (user owned):						
3251207031	Cryogenic processes 3/.....	1	(D)	(D)	(D)	(D)	(D)
3251207041	Noncryogenic processes, including psa, vpsa, membrane, etc. 3/.....	12	(D)	(D)	(D)	(D)	(D)
	Liquid produced for:						
3251207051	Merchant shipment.....	16	242,463 b/	60,557 b/	59,886 a/	60,734 a/	61,286
3251207061	Consumption in same plant 3/.....	5	41,169	8,566	10,352	11,100	11,150
3251207071	Other shipments or uses.....	4	22,871	5,395	5,274	6,832	5,371
325120A	Oxygen.....	(NA)	685,357	179,627	192,346	155,500	157,884
	Gas produced by:						
325120A011	Cryogenic on-site and pipeline 4/.....	8	(D)	(D)	(D)	(D)	(D)
325120A021	Noncryogenic processes by industrial gas producing companies, including psa, vpsa, membrane, etc. 4/.....	2	534,022	143,309	155,992	116,472	118,249
	Captive uses for consumption in same plant (user owned):						
325120A031	Cryogenic processes 5/.....	3	(D)	(D)	(D)	(D)	(D)
325120A041	Noncryogenic processes, including psa, vpsa, membrane, etc. 5/.....	-	-	-	-	-	-
	Liquid produced for:						
325120A051	Merchant shipment.....	16	97,047 b/	24,052 b/	23,893 a/	23,838 a/	25,264
325120A061	Consumption in this plant 5/.....	7	35,850	7,370	8,004	10,279	10,196
325120A071	Other shipments or uses.....	4	18,438	4,896	4,456	4,910	4,175

- Represents zero. D Withheld to avoid disclosing data for individual companies. NA Not available. pt. Part.  
 S Does not meet publication standards.

- 1/Product codes 325120D031, 325120D041, 325120D061, and 325120D071 are combined to avoid disclosing data for individual companies.
- 2/Product codes 3251207011 and 3251207021 are combined to avoid disclosing data for individual companies.
- 3/Product codes 3251207031, 3251207041, and 3251207061 are combined to avoid disclosing data for individual companies.
- 4/Product codes 325120A011 and 325120A021 are combined to avoid disclosing data for individual companies.
- 5/Product codes 325120A031, 325120A041, and 325120A061 are combined to avoid disclosing data for individual companies.

Note: The percent of estimation of each item is indicated as follows: a/10 to 25 percent of this item is estimated.  
 b/26 to 50 percent of this item is estimated. c/Over 50 percent of this item is estimated.

Table 2b. Primary Production of Specified Industrial Gases: 1998  
[Quantity in million cubic feet, unless otherwise noted]

Product code	Product description	No. of cos.	Total	First quarter	Second quarter	Third quarter	Fourth quarter
3251201	Acetylene.....	(NA)	4,649	1,189	1,152	1,106	1,202
3251201011	Produced for compression, including cylinder and pipeline.....	42	666	144	131	185	206
3251201021	Produced for pipeline shipment, excluding that shipped to be compressed, and for consumption in same plant.....	5	3,983	1,045	1,021	921	996
351204	Carbon dioxide [short tons].....	(NA)	14,080,558	(S)	(S)	(S)	(S)
3251204011	Gas, including amounts produced and liquefied.....	31	5,649,290	(S)	(S)	(S)	(S)
3251204021	Liquid, including amounts produced and used to make dry ice.....	27	8,147,566	2,130,009	1,994,325	2,072,086	1,951,146
3251204031	Solid (dry ice).....	11	283,702	63,396	76,561	72,610	71,135
325120D021	Argon, high purity: Produced for cylinder and bulk delivery and pipeline shipments, and for consumption in same plant.....	5	19,443	4,841	4,833	4,850	4,919
325120D pt.	Hydrogen.....	(NA)	551,913	126,543	136,841	141,551	146,978
	Gas produced for:						
325120D031	Merchant shipment 1/.....	10	(D)	(D)	(D)	(D)	(D)
325120D041	Pipeline and on-site use 1/.....	25	(D)	(D)	(D)	(D)	(D)
325120D051	Consumption in same plant.....	33	260,610	64,684	65,967	64,371	65,588
	Liquid produced for:						
325120D061	Merchant shipment 1/.....	3	(D)	(D)	(D)	(D)	(D)
325120D071	Other shipments or uses 1/.....	3	291,303	61,859	70,874	77,180	81,390
3251207	Nitrogen.....	(NA)	870,906	263,532	201,417	202,501	203,456
	Gas produced by:						
3251207011	Cryogenic on-site and pipeline 2/.....	15	(D)	(D)	(D)	(D)	(D)
3251207021	Noncryogenic processes by industrial gas producing companies, including psa, vpsa, membrane, etc. 2/.....	3	565,144	185,473	126,768	126,155	126,748
	Captive uses for consumption in same plant (user owned):						
3251207031	Cryogenic processes 3/.....	11	(D)	(D)	(D)	(D)	(D)
3251207041	Noncryogenic processes, including psa, vpsa, membrane, etc. 3/.....	3	(D)	(D)	(D)	(D)	(D)
	Liquid produced for:						
3251207051	Merchant shipment.....	15	250,062	64,246	60,671	62,738	62,407
3251207061	Consumption in same plant 3/.....	4	19,819	5,053	5,123	5,008	4,635
3251207071	Other shipments or uses.....	7	35,881	8,760	8,855	8,600	9,666
325120A	Oxygen.....	(NA)	676,332	171,001	170,580	168,694	166,057
	Gas produced by:						
325120A011	Cryogenic on-site and pipeline 4/.....	10	(D)	(D)	(D)	(D)	(D)
325120A021	Noncryogenic processes by industrial gas producing companies, including psa, vpsa, membrane, etc. 4/.....	5	515,508	132,113	128,860	127,733	126,802
	Captive uses for consumption in same plant (user owned):						
325120A031	Cryogenic processes 5/.....	3	(D)	(D)	(D)	(D)	(D)
325120A041	Noncryogenic processes, including psa, vpsa, membrane, etc. 5/.....	1	(D)	(D)	(D)	(D)	(D)
	Liquid produced for:						
325120A051	Merchant shipment.....	15	113,626	28,681	29,650	28,657	26,638
325120A061	Consumption in this plant 5/.....	6	23,232	4,374	5,899	5,813	7,146
325120A071	Other shipments or uses.....	5	23,966	5,833	6,171	6,491	5,471

D Withheld to avoid disclosing data for individual companies. NA Not available. pt. Part. S Does not meet publication standards.

1/Product codes 325120D031, 325120D041, 325120D061, and 325120D071 are combined to avoid disclosing data for individual companies.

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3/Product codes 3251207031, 3251207041 and 3251207061 are combined to avoid disclosing data for individual companies.

4/Product codes 325120A011 and 325120A021 are combined to avoid disclosing data for individual companies.

5/Product codes 325120A031, 325120A041, and 325120A061 are combined to avoid disclosing data for individual companies.

Table 3. Production, Exports, Imports, and Apparent Consumption of Industrial Gases  
 [Million cubic meters, unless otherwise noted]

Product code	Product description	Manu- facturers' production	Exports of domestic merchan- dise 1/	Percent exports to manu- facturers' net production	Imports for consump- tion 2/	Apparent consump- tion 3/	Percent imports to apparent consumption
1999							
3251204	Carbon dioxide, gas, liquid, and solid [metric tons].....	11,908,690	84,783	0.7	19,479	11,843,386	0.2
325120D021	Argon.....	557	372	66.8	26	211	12.3
325120D031							
325120D041							
325120D051	Hydrogen.....	12,858	354	2.8	125	12,629	1.0
325120D061							
325120D071							
3251207	Nitrogen.....	24,303	114	0.5	93	24,282	0.4
325120A	Oxygen.....	19,409	177	0.9	18	19,250	0.1
1998							
3251204	Carbon dioxide, gas, liquid, and solid [metric tons].....	12,782,331	85,803	0.7	19,542	12,716,070	0.2
325120D021	Argon.....	551	240	43.6	27	338	8.0
325120D031							
325120D041							
325120D051	Hydrogen.....	15,630	272	1.7	144	15,502	0.9
325120D061							
325120D071							
3251207	Nitrogen.....	24,664	94	0.4	151	24,721	0.6
325120A	Oxygen.....	19,154	142	0.7	23	19,035	0.1

1/Source: Census Bureau report EM 545, U.S. Exports.

2/Source: Census Bureau report IM 145, U.S. Imports for Consumption.

3/Apparent consumption is derived by subtracting exports from the total of net production plus imports.

**Table 4. Comparison of North American Industry Classification System-Based Product Codes with Schedule B Exports Numbers and HTSUSA Import Numbers: 1999**

<b>Product code</b>	<b>Product description</b>	<b>Export numbers 1/</b>	<b>Import numbers 2/</b>
3251204	Carbon dioxide (gas, liquid, and solid) (metric tons) .....	2811.21.0000	2811.21.0000
325120D021	Argon, high purity.....	2804.21.2000	2804.21.2000
325120D031			
325120D041			
325120D051	Hydrogen .....	2804.10.0000	2804.10.0000
325120D061			
325120D071			
3251207	Nitrogen .....	2804.30.0000	2804.30.0000
325120A	Oxygen .....	2804.40.0000	2804.40.0000

1/Source: 1999 edition, Harmonized System-Based Schedule B, Statistical Classification of domestic and foreign commodities exported from the United States.

2/Source: Harmonized Tariff Schedule of the United States, annotated (1999).