

# Inorganic Chemicals

## Summary

1999

REVISED

September 28, 2000

MQ325A(99)-5

(Formerly Series No. MQ28A)

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/).

### 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).

**SUMMARY OF FINDINGS.** Alkalies and chlorine (NAICS 325181) production increased 5 percent to 39,688.4 thousand short tons in 1999, from 37,829.4 thousand short tons in 1998. Chlorine (NAICS 3251811) production increased 8 percent to 25,193.8 thousand short tons in 1999, from 23,382.8 thousand short tons in 1998. Sodium hydroxide production (NAICS 3251814011) remained virtually unchanged from 13,112.5 thousand short tons in 1998 to 13,177.2 thousand short tons in 1999. Other alkalies, sodium bicarbonate finished (NAICS 3251817031) production increased 3 percent to 557.1 thousand short tons in 1999, from 543.4 thousand short tons in 1998.

Titanium dioxide (NAICS 3251311) production increased 2 percent to 1,493.5 thousand short tons in 1999, from the 1,458.7 thousand short tons in 1998.

Production of inorganic chemicals, n.e.c. (NAICS 325188) decreased 6 percent to 11,394 thousand short tons in 1999, from 12,067 thousand short tons in 1998. Leading the industry in production was hydrochloric acid byproduct and other (NAICS 3251884031), which decreased 5 percent from 4,289.9 thousand short tons in 1998 to 4,078.1 thousand short tons in 1999; and other inorganic chemicals, n.e.c. (NAICS 325188G) with 2,341.5 thousand short tons in production in 1999, decreased 12 percent from the 1998 production of 2,652.4 thousand short tons.

Current  
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Address inquiries concerning these data to Primary Goods Industries Branch, Manufacturing and Construction Division (MCD), Washington, DC 20233-6900, or call JoAnna Nguyen, 301-457-4752.

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U S C E N S U S B U R E A U

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Economics and Statistics Administration  
U.S. Census Bureau



Table 1. Summary of Production of Principal Inorganic Chemicals  
[Short tons]

Month and year	Chlorine gas (100 percent) (3251811011)	Sodium hydroxide, total liquid (100 percent) (3251814011)	Titanium dioxide, commodity weight (3251311000)	Hydrochloric acid (100 percent) (3251884021, 4025, 4031)	Aluminum sulfate commercial (17 percent Al2O3) (3251887051)	Sodium sulfate (100 percent Na2SO4) (325188A1A1, A1A4)	Calcium phosphates (100 percent) (325188G047, G051, G054, 3253124241)	Sodium chlorate (100 percent) (325188A141)
1999								
Total.....	13,352,756	r/ 13,177,232	1,493,458	4,498,557	1,195,807	659,883	1,993,390	818,426
Fourth quarter....	3,467,896	r/ 3,378,584	397,035	r/ 1,116,120	296,503	172,600	509,590	r/ 226,266
Third quarter.....	3,306,692	r/ 3,364,057	372,070	1,188,367	326,728	161,709	480,753	189,997
Second quarter....	3,261,043	r/ 3,266,531	371,258	r/ 1,106,465	306,831	161,629	518,478	199,108
First quarter.....	3,317,125	r/ 3,168,060	353,095	r/ 1,087,605	265,745	163,945	484,569	203,055
1998								
Total.....	12,841,273	r/ 13,112,525	1,458,657	4,658,730	1,165,811	629,267	1,981,614	779,226
Fourth quarter....	3,202,314	r/ 3,325,420	346,406	1,178,995	279,526	168,238	507,481	256,123
Third quarter.....	3,197,233	r/ 3,251,375	357,847	1,213,825	321,655	151,572	490,838	174,823
Second quarter....	3,191,628	r/ 3,208,573	384,249	1,114,344	289,014	156,354	486,259	174,251
First quarter.....	3,250,098	r/ 3,327,157	370,155	1,151,566	275,616	153,103	497,036	174,029
1997								
Total.....	12,922,235	10,972,801	1,466,256	4,569,468	1,161,136	705,971	(D)	625,949
Fourth quarter....	3,280,171	3,018,893	365,169	1,170,399	281,742	168,087	(D)	161,491
Third quarter.....	3,298,188	3,014,135	382,324	1,175,421	315,905	184,411	488,098	155,972
Second quarter....	3,152,362	2,983,407	373,794	1,104,923	291,333	185,436	527,007	143,848
First quarter.....	3,191,514	1,956,366	344,969	1,118,725	272,156	168,037	527,936	164,638

D Withheld to avoid disclosing data for individual companies. r/Revised by 5 percent or more from previously published data.

Table 2. Primary Production and Stocks of Specified Inorganic Chemicals by Quarter: 1999 and 1998  
[Short tons]

Product code	Product description	Year	Total	First quarter	Second quarter	Third quarter	Fourth quarter	Stocks on hand December 31
	Hydrochloric acid (100 percent HCl):							
	Total.....	1999.....	4,498,557	1,087,605	1,106,465	1,188,367	1,116,120	(NA)
		1998.....	4,658,730	1,151,566	1,114,344	1,213,825	1,178,995	(NA)
3251884021	From salt and acid 1/.....	1999.....	(D)	(D)	(D)	(D)	(D)	(D)
		1998.....	(D)	(D)	(D)	(D)	(D)	(D)
3251884025	From chlorine and hydrogen.....	1999.....	420,420	r/ 96,691	r/ 103,344	107,386	112,999	(NA)
		1998.....	368,783	89,042	87,193	100,193	92,355	(NA)
3251884031	Byproduct and other.....	1999.....	4,078,137	r/ 990,914	r/ 1,003,121	1,080,981	r/ 1,003,121	(NA)
		1998.....	4,289,947	1,062,524	1,027,151	1,113,632	1,086,640	(NA)
	Hydrofluoric acid (100 percent HF):							
	Produced and withdrawn from system:							
3251884045, 4051	Anhydrous and technical.....	1999.....	(D)	(D)	(D)	(D)	(D)	(NA)
		1998.....	(D)	(D)	(D)	(D)	(D)	(NA)
3251884011	Boric (boracic) (100 percent H3BO3).....	1999.....	(D)	(D)	(D)	(D)	(D)	(D)
		1998.....	(D)	(D)	(D)	(D)	(D)	(D)
	Chlorine (100 percent Cl):							
3251811011	Total gas 2/.....	1999.....	13,352,756	3,317,125	3,261,043	3,306,692	3,467,896	(NA)
		1998.....	12,841,273	3,250,098	3,191,628	3,197,233	3,202,314	(NA)
3251811021	Total liquid.....	1999.....	11,840,996	3,012,964	2,915,746	2,979,609	2,932,677	(NA)
		1998.....	10,541,548	2,684,326	2,657,294	2,595,693	2,604,235	(NA)
3251817011	Potassium hydroxide 3/.....	1999.....	(D)	(D)	(D)	(D)	(D)	(NA)
		1998.....	(D)	(D)	(D)	(D)	(D)	(NA)
3251817031	Sodium bicarbonate, finished (100 percent NaHCO3).....	1999.....	557,076	132,153	138,019	147,702	r/ 139,202	(NA)
		1998.....	543,404	124,989	136,415	136,771	145,229	(NA)
3251814011	Sodium hydroxide (caustic soda) (100 percent NaOH) (all processes):							
	Liquid 4/.....	1999.....	r/ 13,177,232	r/ 3,168,060	r/ 3,266,531	r/ 3,364,057	r/ 3,378,584	154,657
		1998.....	r/ 13,112,525	r/ 3,327,157	r/ 3,208,573	r/ 3,251,375	r/ 3,325,420	489,543
3251814041	Dry (all forms).....	1999.....	(D)	(D)	(D)	(D)	(D)	(NA)
		1998.....	(D)	(D)	(D)	(D)	(D)	(NA)
2123913111	Sodium carbonate, natural and synthetic 5/.....	1999.....	11,302	2,714	2,843	2,799	2,946	248
		1998.....	11,133	2,783	2,804	2,770	2,776	301
3313110100	Aluminum oxide (alumina) (100 percent Al2O3).....	1999.....	4,426,596	1,170,342	1,279,404	967,250	1,009,600	107,201
		1998.....	5,001,000	1,212,782	1,283,188	1,212,604	1,292,426	a/ 132,857
3251887021	Aluminum chloride (anhydrous) (100 percent AlCl3).....	1999.....	(D)	(D)	(D)	(D)	(D)	(NA)
		1998.....	29,677	7,683	7,596	7,006	7,392	(NA)
3251887051	Aluminum sulfate (commercial) (17 percent Al2O3) 6/.....	1999.....	1,195,807	265,745	306,831	326,728	r/ 296,503	(NA)
		1998.....	1,165,811	275,616	289,014	321,655	279,526	(NA)
325188G037	Calcium carbide (commercial).....	1999.....	(D)	(D)	(D)	(D)	(D)	(NA)
		1998.....	(D)	(D)	(D)	(D)	(D)	(NA)
325188G047	Calcium phosphate: Monobasic (21 percent minimum P, 100 percent CaH4(PO4)2).....	1999.....	941,779	219,839	r/ 240,474	229,702	251,764	39,418
		1998.....	866,676	221,530	200,651	217,750	226,745	33,548
325188G051	Dibasic (except fertilizer grades) (18.5 minimum P) (100 percent CaHPO4).....	1999.....	a/ 560,710	a/ 143,581	a/ 154,509	a/ 133,094	a/ 129,526	41,381
		1998.....	581,099	141,880	157,921	133,468	147,830	33,144

Continued

Table 2. Primary Production and Stocks of Specified Inorganic Chemicals by Quarter: 1999 and 1998  
[Short tons]

Product code	Product description	Year						Stocks on hand December 31
			Total	First quarter	Second quarter	Third quarter	Fourth quarter	
3253124241	Tribasic (100 percent Ca <sub>3</sub> (PO <sub>4</sub> ) <sub>2</sub> ): Animal feed grades (defluorinated phosphate rock) (18.0 percent minimum P).....	1999.....	460,448	115,285	114,392	108,720	122,051	22,805
		1998.....	502,166	125,812	119,529	130,839	125,986	26,276
325188G054	Other grades.....	1999.....	30,453	r/ 5,864	9,103	9,237	6,249	3,629
		1998.....	31,673	7,814	8,158	8,781	6,920	D
325998H1E4	Carbon activated, excluding reactivated carbon (dry weight)	1999.....	166,675	r/ 39,830	43,760	39,680	43,405	21,206
		1998.....	165,465	43,584	45,658	39,290	36,933	31,767
325998H1E7	Granular carbons.....	1999.....	95,558	b/ r/ 24,293	b/ r/ 27,114	a/ 21,718	a/ 22,433	a/ 13,801
		1998.....	97,630	26,210	27,550	21,772	22,098	20,659
325998H1E7	Pulverized carbons.....	1999.....	b/ 71,117	b/ r/ 15,537	b/ r/ 16,646	b/ 17,962	b/ 20,972	b/ 7,405
		1998.....	67,835	17,374	18,108	17,518	14,835	a/ 11,108
325188G081	Hydrogen peroxide (100 percent by weight).....	1999.....	376,688	89,135	99,160	87,351	101,042	(NA)
		1998.....	356,804	82,407	86,902	89,345	98,150	(NA)
325188G0E7	Phosphorus elemental (technical).....	1999.....	(D)	(D)	(D)	(D)	(D)	(D)
		1998.....	(D)	(D)	(D)	(D)	(D)	(D)
325188G0F1	Phosphorus oxychloride (100 percent POCl <sub>3</sub> )....	1999.....	a/ 36,833	a/ 9,473	a/ 9,360	a/ 8,780	a/ 9,220	(NA)
		1998.....	33,160	8,549	8,276	7,689	6,846	(NA)
325188G0F4	Phosphorus pentasulfide (100 percent P <sub>2</sub> S <sub>5</sub> )....	1999.....	(D)	(D)	12,570	12,468	13,464	(NA)
		1998.....	(D)	16,167	12,223	12,585	(D)	(NA)
325188G0F7	Phosphorus trichloride (chloride) (100 percent PCl <sub>3</sub> ).....	1999.....	a/ 142,638	a/ 44,600	a/ 36,230	a/ 45,501	a/ r/ 16,307	(NA)
		1998.....	(D)	(D)	(D)	(D)	(D)	(NA)
325188A117	Potassium pyrophosphate (tetrapotassium pyrophosphate) (100 percent K <sub>4</sub> P <sub>2</sub> O <sub>7</sub> ).....	1999.....	b/ 30,595	b/ r/ 6,881	b/ 8,059	b/ 7,634	b/ 8,021	(NA)
		1998.....	28,575	7,471	7,407	7,200	6,497	(NA)
325188G0G7	Silicon tetrachloride (100 percent SiCl <sub>4</sub> ).....	1999.....	(D)	(D)	(D)	(D)	(D)	(NA)
		1998.....	44,355	12,816	8,956	12,159	10,424	(NA)
325188G061	Sodium bichromate and chromate (hydrous).....	1999.....	(D)	(D)	(D)	(D)	(D)	(NA)
		1998.....	(D)	(D)	(D)	(D)	(D)	(NA)
325188A141	Sodium chlorate (100 percent NaClO <sub>3</sub> ).....	1999.....	818,426	203,055	199,108	189,997	226,266	30,446
		1998.....	779,226	174,029	174,251	174,823	256,123	36,214
325188A151	Sodium hydrosulfite (100 percent Na <sub>2</sub> SO <sub>4</sub> ).....	1999.....	(D)	(D)	(D)	(D)	(D)	(NA)
		1998.....	111,024	28,741	24,988	27,854	29,441	(NA)
325188A134	Sodium (metal) (100 percent Na).....	1999.....	(D)	(D)	(D)	(D)	(D)	(D)
		1998.....	(D)	(D)	(D)	(D)	(D)	(D)
325188A161	Sodium phosphate: Tribasic (100 percent Na <sub>3</sub> PO <sub>4</sub> ).....	1999.....	29,387	r/ 6,661	7,522	7,520	7,684	(NA)
		1998.....	21,314	4,708	4,461	6,911	5,234	(NA)
325188A164	Tetrabasic (pyro) (100 percent Na <sub>4</sub> P <sub>2</sub> O <sub>7</sub> ).....	1999.....	(D)	3,248	2,279	3,868	(D)	(NA)
		1998.....	(D)	(D)	3,323	3,072	2,286	(NA)
325188A167	Meta (100 percent NaPO <sub>3</sub> ).....	1999.....	a/ 44,495	a/ r/ 9,310	a/ 12,132	a/ 11,230	a/ 11,823	(NA)
		1998.....	46,523	10,806	11,719	12,546	11,452	(NA)
325188A174	Tripoly (100 percent Na <sub>5</sub> P <sub>3</sub> O <sub>10</sub> ).....	1999.....	196,284	r/ 45,763	47,705	51,623	51,193	(NA)
		1998.....	225,957	60,031	56,973	54,555	54,398	(NA)
325188A181	Sodium silicate: Soluble silicate glass (water glass, solid and liquid) (anhydrous) 7/.....	1999.....	1,092,934	278,155	274,248	257,039	r/ 283,492	(NA)
		1998.....	a/ 1,208,674	316,287	328,919	277,608	285,860	(NA)

Continued

Table 2. Primary Production and Stocks of Specified Inorganic Chemicals by Quarter: 1999 and 1998  
[Short tons]

Product code	Product description	Year	Total	First quarter	Second quarter	Third quarter	Fourth quarter	Stocks
								on hand December 31
325188A184	Metasilicate pentahydrate (100 percent Na <sub>2</sub> SiO <sub>3</sub> ·5H <sub>2</sub> O).....	1999.....	37,635	10,740	8,435	8,333	10,127	(NA)
		1998..... a/	41,236	10,857	10,649	10,220	9,510	(NA)
325188A187	Metasilicate anhydrous (100 percent Na <sub>2</sub> SiO <sub>3</sub> )..	1999.....	31,807	8,870	6,694	6,873	9,370	(NA)
		1998.....	35,691	9,732	9,385	8,290	8,284	(NA)
	Sodium sulfate (100 percent Na <sub>2</sub> SO <sub>4</sub> ): Total.....	1999.....	659,883	163,945	161,629	161,709	172,600	(NA)
		1998.....	629,267	153,103	156,354	151,572	168,238	(NA)
325188A1A1	High Purity (more than 99 percent Na <sub>2</sub> SO <sub>4</sub> )...	1999.....	(D)	(D)	(D)	(D)	(D)	(NA)
		1998.....	(D)	(D)	(D)	(D)	(D)	(NA)
325188A1A4	Lower purity (99 percent or less Na <sub>2</sub> SO <sub>4</sub> ) and Glauber's salt (100 percent Na <sub>2</sub> SO <sub>4</sub> ·10H <sub>2</sub> O).....	1999.....	(D)	(D)	(D)	(D)	(D)	(NA)
		1998.....	(D)	(D)	(D)	(D)	(D)	(NA)
3251311000	Titanium dioxide (composite and pure) (100 percent TiO <sub>2</sub> ) (commodity weight) 8/.....	1999.....	1,493,458	353,095	371,258	372,070	397,035	177,855
		1998.....	1,458,657	370,155	384,249	357,847	346,406	106,832

D Withheld to avoid disclosing data for individual companies. NA Not available. r/Revised by 5 percent or more from previously published data.

1/"Hydrochloric acid produced from salt and acid" is combined with "Hydrochloric acid byproduct and other" to avoid disclosing data for individual companies.

2/Total gas production including quantities liquefied for use, storage, or shipments.

3/Liquid production data represent total production including quantities later evaporated to solid caustic and reported as such.

4/Includes some liquid shipped as interplant transfers to other establishments for further processing to dry forms.

5/U.S. Geological Survey; quantity in thousand short tons

6/Excludes quantities produced and consumed by municipalities.

7/Excludes quantities produced and consumed in the same establishment in the manufacture of meta-, ortho-, and sesquisilicates.

8/Represents total stocks of producing companies, including amounts held at locations other than producing locations.

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

Table 3. Quantity of Production, Exports, Imports, and Apparent Consumption of Selected Inorganic Chemicals: 1999 and 1998  
 [Quantity in metric tons]

Product code	Product description	Year	Production	Exports of domestic merchandise /1	Imports for consumption /2	Apparent consumption /3	Percent imports to apparent consumption
3251811011	Chlorine gas.....	1999.....	12,113,620	21,088	326,295	12,418,827	2.6
		1998.....	11,649,526	22,456	374,228	12,001,298	3.1
3251814011	Sodium hydroxide, total liquid (all processes).....	1999.....	11,954,385	3,160,217	846,704	9,640,872	8.8
		1998.....	11,895,683	1,500,548	540,900	10,936,035	5.6
3251817011	Potassium hydroxide, liquid.....	1999.....	(D)	(D)	(D)	(D)	(D)
		1998.....	449,559	67,030	10,742	393,271	2.7
3251817031	Finished sodium bicarbonate.....	1999.....	505,379	72,851	13,353	445,881	3.0
		1998.....	492,973	62,404	13,135	443,704	3.0
3251311000	Titanium dioxide, composite and pure.....	1999.....	1,354,865	383,635	224,876	1,196,106	18.8
		1998.....	1,323,285	398,365	199,789	1,124,709	17.8
3251884011	Boric acid.....	1999.....	(D)	107,037	30,177	(D)	(D)
		1998.....	(D)	105,787	23,372	(D)	(D)
3251884021, 4025, 4031	Hydrochloric acid.....	1999.....	4,191,441	55,041	77,192	4,213,592	1.8
		1998.....	4,226,372	51,065	72,290	4,247,597	1.7
3251884045, 4051	Hydrofluoric acid.....	1999.....	(D)	2,127	130,573	(D)	(D)
		1998.....	(D)	3,457	184,514	(D)	(D)
3313110100	Aluminum oxide.....	1999.....	4,015,808	1,188,500	3,651,191	6,478,499	56.4
		1998.....	4,536,877	1,237,377	3,915,692	7,215,192	54.3
3251887051	Aluminum sulfate (commercial).....	1999.....	1,084,836	6,673	31,640	1,109,803	2.9
		1998.....	1,057,617	7,369	31,149	1,081,397	2.9
325188A134	Sodium metal.....	1999.....	(D)	1,365	1,218	(D)	(D)
		1998.....	(D)	2,728	1,004	(D)	(D)
325188A141	Sodium chlorate.....	1999.....	742,476	57,543	439,567	1,124,500	39.1
		1998.....	706,909	49,425	430,384	1,087,868	39.6
325188A161	Sodium phosphate tribasic.....	1999.....	26,660	398	5,883	32,145	18.3
		1998.....	19,336	798	3,824	22,362	17.1
325188A174	Sodium phosphate tripoly...	1999.....	178,069	19,277	74,400	233,192	31.9
		1998.....	204,987	32,314	71,790	244,463	29.4
325188A181, A191, A194	Sodium silicates(other than metasilicates).....	1999.....	991,509	32,624	25,602	984,487	2.6
		1998.....	1,096,502	30,324	21,315	1,087,493	2.0
325188A184, A187	Sodium metasilicates.....	1999.....	62,998	21,337	1,738	43,399	4.0
		1998.....	69,697	9,767	1,923	61,853	3.1
325188A1A1, A1A4	Sodium sulfate.....	1999.....	598,646	47,764	76,637	627,519	12.2
		1998.....	570,867	40,132	110,886	641,621	17.3

Continued

Table 3. Quantity of Production, Exports, Imports, and Apparent Consumption of Selected Inorganic Chemicals: 1999 and 1998  
 [Quantity in metric tons]

Product code	Product description	Year	Production	Exports of domestic merchandise /1	Imports for consumption /2	Apparent consumption /3	Percent imports to apparent consumption
325188G037	Calcium carbide.....	1999.....	(D)	26,252	445	(D)	(D)
		1998.....	(D)	32,054	671	(D)	(D)
325188G047, G051, G054, 3253124241	Calcium phosphates.....	1999.....	1,808,403	192,684	17,099	1,632,818	1.0
		1998.....	1,797,708	155,803	38,584	1,680,489	2.3
325998H1E4, H1E7	Carbon activated (granular and pulverized) /4.....	1999.....	151,208	33,386	43,914	161,736	27.2
		1998.....	150,109	41,284	41,853	150,678	27.8
325188G081	Hydrogen peroxide.....	1999.....	341,731	42,015	81,735	381,451	21.4
		1998.....	323,690	45,584	89,830	367,936	24.4
325188G0E7	Phosphorous, elemental.....	1999.....	(D)	5,744	1,820	(D)	(D)
		1998.....	(D)	8,023	1,790	(D)	(D)
325188G0F1, G0F7	Phosphorous, oxychloride and trichloride.....	1999.....	162,814	823	59	162,050	-
		1998.....	(D)	1,099	42	(D)	(D)

- Represents zero. D Withheld to avoid disclosing data for individual companies.

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

2/Source: Census Bureau report IM 146, U.S. Imports for Consumption.

3/Apparent consumption is derived by subtracting exports from manufacturers' production plus imports.

Apparent consumption does not include any adjustments for changes in inventories.

4/Includes reactivated carbon.

Note: For comparison of North American Industry Classification System-Based codes, Schedule B export codes, and HTSUSA import codes, see Table 4.

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

Product code	Product description	Export number 1/	Import number 2/
3251881011	Chlorine gas.....	2801.10.0000	2801.10.0000
3251817011	Potassium hydroxide, liquid.....	2815.20.0050 2815.20.0090	2815.20.0050 2815.20.0090
3251814011	Sodium hydroxide, total liquid (all processes)...	2815.12.0000	2815.12.0000
3251817031	Finished sodium bicarbonate.....	2836.30.0000	2836.30.0000
3251884011	Boric acid.....	2810.00.0000	2810.00.0000
3251884021, 4025, 4031	Hydrochloric acid.....	2806.10.0000	2806.10.0000
3251884045, 4051	Hydrofluoric acid.....	2811.11.0000	2811.11.0000
3251884025, 4031	Hydrochloric acid.....	2806.10.0000	2806.10.0000
3313110100	Aluminum oxide.....	2818.20.0000	2818.20.0000
3251887021	Aluminum chloride.....	2827.32.0000	2827.32.0000
3251887051	Aluminum sulfate (commercial).....	2833.22.0000	2833.22.0000
325188A134	Sodium metal.....	2805.11.0000	2805.11.0000
325188A141	Sodium chlorate.....	2829.11.0000	2829.11.0000
325188A161	Sodium phosphate tribasis.....	2835.23.0000	2835.23.0000
325188A174	Sodium phosphate tripoly.....	2835.31.0000	2835.31.0000
325188A181, A191, A194	Sodium silicates (other than metasilicates).....	2839.19.0000	2839.19.0000
325188A184, A187	Sodium metasilicates.....	2839.11.0000	2839.11.0000
325188A1A1, A1A4	Sodium sulfite.....	2833.11.1000 2833.11.5000 2833.19.0000	2833.11.1000 2833.11.5000 2833.19.0000
325188G037	Calcium carbide.....	2849.10.0000	2849.10.0000
325188G047, G051, G054, 3253124241	Calcium phosphates.....	2835.25.0000 2835.26.0000	2835.25.0000 2835.26.0000
325998H1E4, H1E7	Carbon activated (granular and pulverized).....	3802.10.0000	3802.10.0000
325188G081	Hydrogen peroxide.....	2847.00.0000	2847.00.0000
325188G0E7	Phosphorous, elemental.....	2804.70.0000	2804.70.0000
325188G0F1, G0F7	Phosphorous, oxychloride and trichloride.....	2812.10.5010	2812.10.5010
3251311000	Titanium dioxide (composite and pure).....	2823.00.0000 3206.11.0000 3206.19.0000	2823.00.0000 3206.11.0000 3206.19.0000

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).