

## Summary

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#### SUMMARY OF FINDINGS

Alkalies and chlorine (NAICS 325181) production increased 15.4 percent to 36,936.3 thousand short tons in 2004, from 32,009.4 thousand short tons in 2003. Chlorine (NAICS 3251811) production increased 18.5 percent to 25,115.7 thousand short tons in 2004, from 21,198.2 thousand short tons in 2003. Sodium hydroxide (NAICS 3251814111) production

increased 9.4 percent to 10,603.8 thousand short tons in 2004, from 9,696.5 thousand short tons in 2003. Finished sodium bicarbonate (NAICS 3251817131) production increased 7.1 percent to 637.8 thousand short tons in 2004, from 595.6 thousand short tons in 2003.

Hydrochloric acid (NAICS 3251884125, 4131) production increased 26.9 percent to 5,844.1 thousand short tons in 2004, from 4,603.7 thousand short tons in 2003. Aluminum sulfate, commercial (NAICS 3251887151) production increased 2.8 percent to 1,093.2 thousand short tons in 2004, from 1,063.5 thousand short tons in 2003. Sodium sulfate, high purity (NAICS 325188A1A1) production increased 0.4 percent to 515.2 thousand short tons in 2004, from 513.4 thousand short tons in 2003. Sodium chlorate (NAICS 325188A141) production increased 1.2 percent to 746.1 thousand short tons in 2004, from 737.1 thousand short tons in 2003.

For general CIR information, explanation of general terms and historical note, see the appendix.

Address inquiries concerning these data to Primary Goods Industries Branch, Manufacturing and Construction Division, (MCD), Washington, DC 20233-6900, or call Mai Le, 301-763-4797. For mail or fax copies of this publication, please contact the Information Services Center, MCD, Washington, DC 20233-6900, or call 301-763-4673.

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

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U.S. Department of Commerce  
Economics and Statistics Administration  
U.S. CENSUS BUREAU

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

Quarter and year	Chlorine gas (100 percent) (3251811111)	Sodium hydroxide, total liquid (100 percent) (3251814111)	Titanium dioxide, commodity weight (3251311100)	Hydro- chloric acid (100 percent) (3251884125, 4131)	Aluminum sulfate commercial (17 percent Al <sub>2</sub> O <sub>3</sub> ) (3251887151)	Sodium sulfate, high purity (100 percent Na <sub>2</sub> SO <sub>4</sub> ) (325188A1A1)	Finished sodium bicarbonate (58 percent NaHCO <sub>3</sub> ) (3251817131)	Sodium chlorate (100 percent) (325188A141)
<b>2004</b>								
Total.....	13,590,484	10,603,810	(NA)	r/ 5,844,059	r/ 1,093,225	515,167	637,783	746,056
Fourth quarter.....	3,419,494	2,676,981	(NA)	r/ 1,456,427	r/ 266,858	124,923	165,978	174,397
Third quarter.....	3,447,424	2,707,098	(NA)	r/ 1,478,178	r/ 302,435	139,216	167,378	207,088
Second quarter.....	3,418,418	2,641,595	(NA)	r/ 1,485,298	r/ 280,123	132,782	159,842	184,367
First quarter.....	3,305,148	2,578,136	(NA)	r/ 1,424,156	r/ 243,809	118,246	144,585	180,204
<b>2003</b>								
Total.....	11,421,454	9,696,465	1,567,955	4,603,667	1,063,483	513,350	595,588	737,122
Fourth quarter.....	3,032,298	2,472,775	403,121	1,124,751	255,931	130,076	158,120	186,298
Third quarter.....	2,979,453	2,466,213	381,574	1,198,998	287,800	129,302	152,561	180,957
Second quarter.....	2,387,214	2,197,801	402,339	1,156,001	264,368	115,931	151,112	191,867
First quarter.....	3,022,489	2,559,676	380,921	1,123,917	255,384	138,041	133,795	178,000

NA Not available for 2004. Data collection was discontinued at the end of 2003. r/Revised by 5 percent or more from previously published data.

Table 2. Summary of Primary Production of Specified Inorganic Chemicals: 2004 and 2003  
 [Short tons, unless otherwise noted]

Product code	Product description	2004				2003			
		Total production (quantity)	Total shipments, including interplant transfers		Total production (quantity)	Total shipments, including interplant transfers			
			Quantity	Value		Quantity	Value		
Chlorine and alkalis:									
Chlorine (100 percent):									
3251811111	Gas 1/.....	13,590,484	10,976,496	1,553,124	11,421,454	7,850,705	1,103,634		
	Fourth quarter.....	a/ 3,419,494	a/ 2,829,302	436,839	a/ 3,032,298	2,174,145	a/ 285,835		
	Third quarter.....	a/ 3,447,424	a/ 2,836,906	421,297	a/ 2,979,453	2,102,089	a/ 286,484		
	Second quarter.....	a/ 3,418,418	a/r/ 2,746,181	r/ 374,403	a/ 2,387,214	1,496,325	a/ 259,562		
	First quarter.....	a/ 3,305,148	a/ 2,564,107	320,585	a/ 3,022,489	2,078,146	a/ 271,753		
3251811121	Liquid.....	11,525,169	12,394,019	1,885,576	9,776,724	9,209,518	1,366,388		
	Fourth quarter.....	a/ 2,909,621	a/ 3,169,138	a/ 532,597	a/ 2,554,101	a/ 2,450,067	a/ 344,083		
	Third quarter.....	a/ 2,919,606	a/ 3,162,211	a/ 506,188	a/ 2,589,760	a/ 2,398,179	a/ 341,671		
	Second quarter.....	a/ 2,889,685	a/ 3,111,195	a/ 459,372	a/ 2,025,089	a/ 1,898,657	a/ 336,454		
	First quarter.....	a/ 2,806,257	a/ 2,951,475	a/r/ 387,419	a/ 2,607,774	a/ 2,462,615	a/ 344,180		
3251814111	Liquid 2/.....	10,603,810	(X)	(X)	9,696,465	(X)	(X)		
	Fourth quarter.....	a/ 2,676,981	(X)	(X)	a/ 2,472,775	(X)	(X)		
	Third quarter.....	a/ 2,707,098	(X)	(X)	a/ 2,466,213	(X)	(X)		
	Second quarter.....	a/ 2,641,595	(X)	(X)	a/ 2,197,801	(X)	(X)		
	First quarter.....	a/ 2,578,136	(X)	(X)	a/ 2,559,676	(X)	(X)		
3251817111	Potassium hydroxide (caustic potash) (88 to 92 percent), liquid 2/.....	579,075	805,426	209,067	519,171	737,684	188,014		
	Fourth quarter.....	153,730	205,632	51,153	132,586	189,976	48,685		
	Third quarter.....	148,852	213,043	54,051	122,830	(D)	43,874		
	Second quarter.....	145,313	185,837	52,050	135,329	(D)	46,946		
	First quarter.....	131,180	200,914	51,813	128,426	186,902	48,509		
3251817131	Finished sodium bicarbonate (58 percent NaHCO3).....	637,783	546,746	144,783	595,588	518,239	135,497		
	Fourth quarter.....	165,978	(S)	(S)	158,120	131,847	a/ 34,749		
	Third quarter.....	167,378	143,170	38,328	152,561	131,144	34,327		
	Second quarter.....	159,842	138,174	36,256	151,112	131,094	a/ 34,792		
	First quarter.....	144,585	122,955	32,786	133,795	(S)	(S)		
2123913111	Sodium carbonate, natural (soda ash) (58 percent) 3/.....	11,846	(X)	(X)	11,530	(X)	(X)		
	Fourth quarter.....	3,055	(X)	(X)	2,987	(X)	(X)		
	Third quarter.....	3,082	(X)	(X)	2,917	(X)	(X)		
	Second quarter.....	r/ 2,792	(X)	(X)	2,853	(X)	(X)		
	First quarter.....	2,917	(X)	(X)	2,773	(X)	(X)		
Chlorine bleaches and other inorganic bleaching compounds:									
325188G1P4	Industrial, liquid and dry.....	(S)	(S)	(S)	360,393	(S)	(S)		
	Fourth quarter.....	(S)	(S)	(S)	(S)	(S)	(S)		
	Third quarter.....	(S)	(S)	(S)	b/ 107,674	(S)	(S)		
	Second quarter.....	(S)	(S)	(S)	(S)	(S)	(S)		
	First quarter.....	(S)	(S)	(S)	(S)	(S)	(S)		
Acids:									
Hydrochloric (100 percent):									
3251884125	From chlorine and hydrogen.....	421,267	r/ 164,583	r/ 34,182	(S)	(S)	47,297		
	Fourth quarter.....	b/r/ 97,792	a/r/ 42,823	a/r/ 9,027	(S)	(S)	b/ 12,304		
	Third quarter.....	b/ 101,712	a/r/ 40,717	a/r/ 8,741	(S)	(S)	b/ 11,038		
	Second quarter.....	b/ 109,308	a/r/ 39,619	a/r/ 8,221	(S)	(S)	b/ 11,952		
	First quarter.....	b/ 112,455	a/r/ 41,424	a/r/ 8,193	(S)	(S)	b/ 12,003		
3251884131	Byproduct and other 4/.....	r/ 5,422,792	r/ 4,054,347	(S)	4,079,354	2,881,273	144,693		
	Fourth quarter.....	b/r/ 1,358,635	b/r/ 1,039,520	(S)	a/ 982,680	a/ 666,449	b/ 34,403		
	Third quarter.....	a/r/ 1,376,466	a/r/ 1,016,493	(S)	a/ 1,068,168	a/r/ 757,564	b/ 37,270		
	Second quarter.....	b/r/ 1,375,990	a/r/ 1,027,181	(S)	a/ 1,028,921	a/ 748,756	b/ 37,202		
	First quarter.....	b/r/ 1,311,701	a/r/ 971,153	(S)	a/ 999,585	a/r/ 708,504	b/ 35,818		
3251884141	Hydrocyanic, including anhydrous (100 percent).....	r/ 379,270	244,496	r/ 182,596	350,099	(D)	109,691		
	Fourth quarter.....	b/r/ 80,951	(S)	b/r/ 48,446	b/ 83,684	(S)	b/ 30,832		
	Third quarter.....	b/r/ 88,032	(S)	b/r/ 46,268	b/ 77,149	(S)	b/ 27,230		
	Second quarter.....	b/r/ 113,909	(S)	b/r/ 42,968	b/ 84,066	(D)	(D)		
	First quarter.....	b/r/ 96,378	b/ 60,489	b/r/ 44,914	b/ 105,200	(D)	(D)		
Aluminum oxide and aluminum compounds:									
3313110100	Aluminum oxide (except natural alumina (100 percent Al2O3)).....	(D)	(D)	r/ 1,107,507	(D)	(D)	(D)		
	Fourth quarter.....	(D)	(D)	b/r/ 287,917	(D)	(D)	(D)		
	Third quarter.....	(D)	(D)	b/r/ 294,995	(D)	(D)	(D)		
	Second quarter.....	(D)	(D)	b/r/ 261,419	(D)	(D)	(D)		
	First quarter.....	(D)	(D)	b/r/ 263,176	(D)	(D)	(D)		

Table 2. Summary of Primary Production of Specified Inorganic Chemicals: 2004 and 2003  
 [Short tons, unless otherwise noted]

Product code	Product description	2004						2003			
		Total production (quantity)	Total shipments, including interplant transfers		Total production (quantity)	Total shipments, including interplant transfers					
			Quantity	Value		Quantity	Value				
3251887121	Aluminum chloride, anhydrous (100 percent).....	(S)	(D)	(D)	(S)	(D)	(D)	(D)	(D)	(D)	
	Fourth quarter.....	(S)	(D)	(D)	(S)	(D)	(D)	(D)	(D)	(D)	
	Third quarter.....	(S)	(D)	(D)	(S)	(D)	(D)	(D)	(D)	(D)	
	Second quarter.....	(S)	(D)	(D)	(S)	(D)	(D)	(D)	(D)	(D)	
	First quarter.....	(S)	(D)	(D)	(S)	(D)	(D)	(D)	(D)	(D)	
3251887131	Aluminum hydroxide, trihydrate (100 percent).....	r/ 887,011	r/ 845,229	r/ 194,009	a/ 490,511	b/ 538,030	b/ 356,644				
	Fourth quarter.....	(S) b/r/ 214,508	b/r/ 47,693	a/ 129,056	b/ 141,159	(S)					
	Third quarter.....	b/r/ 234,551	b/r/ 228,765	a/ 127,186	b/ 139,466	(S)					
	Second quarter.....	(S) 280,123	(S) b/r/ 50,031	a/ 121,269	b/ 132,409	(S)					
	First quarter.....	(S) b/r/ 214,537	b/r/ 45,541	a/ 113,000	b/ 124,996	(S)					
3251887151	Aluminum sulfate: Commercial (17 percent aluminum oxide) 5/.....	r/ 1,093,225	r/ 1,070,685	r/ 124,805	a/ 1,063,483	r/ 1,029,886	r/ 123,475				
	Fourth quarter.....	a/r/ 266,858	a/r/ 262,160	a/r/ 31,116	a/ 255,931	b/r/ 248,182	b/r/ 30,271				
	Third quarter.....	a/r/ 302,435	a/r/ 296,262	a/r/ 35,128	a/ 287,800	b/r/ 284,617	b/r/ 32,848				
	Second quarter.....	a/r/ 280,123	a/r/ 273,527	a/r/ 32,822	a/ 264,368	b/r/ 256,901	b/r/ 31,295				
	First quarter.....	b/r/ 243,809	b/r/ 238,736	a/r/ 25,739	a/ 255,384	a/r/ 240,186	a/r/ 29,061				
3251887161	Iron-free (17 percent aluminum oxide).....	326,604	329,038	25,926	305,377	306,019	22,504				
	Fourth quarter.....	81,956	82,570	6,733	73,752	74,129	5,439				
	Third quarter.....	a/ 86,685	a/ 87,495	a/ 7,024	a/ 84,510	a/ 83,998	a/ 6,017				
	Second quarter.....	a/ 82,064	a/ 82,414	a/ 6,282	a/ 72,469	a/ 72,569	a/ 5,451				
	First quarter.....	a/ 75,899	a/ 76,559	a/ 5,887	a/ 74,646	a/ 75,323	a/ 5,597				
3251887171	Aluminates (sodium aluminate, potassium aluminate, etc.) (100 percent).....	380,611	374,965	59,423	396,105	336,106	47,080				
	Fourth quarter.....	97,501	96,240	16,050	r/ 102,375	r/ 89,306	12,571				
	Third quarter.....	98,176	97,000	15,749	102,217	87,293	12,623				
	Second quarter.....	a/ 97,338	a/ 95,947	a/ 15,624	102,012	88,367	11,953				
	First quarter.....	87,596	85,778	12,000	89,501	71,140	9,933				
325188A111	Potassium and sodium compounds: Potassium iodide (100 percent).....	338	281	4,770	374	313	4,668				
	Fourth quarter.....	93	b/ 69	b/ 1,152	b/ 78	60	1,011				
	Third quarter.....	72	a/ 63	a/ 1,019	97	76	1,238				
	Second quarter.....	106	b/ 74	b/ 1,244	98	89	1,302				
	First quarter.....	67	a/ 60	b/ 1,011	101	88	1,117				
325188A117	Potassium pyrophosphate (tetrapotassium pyrophosphate) (anhydrous, 100 percent).....	(S)	(S)	26,087	32,874	33,429	24,240				
	Fourth quarter.....	(S)	(S)	(S)	a/ 8,750	a/ 8,703	b/ 7,714				
	Third quarter.....	(S)	(S)	(S)	(S)	a/ 8,938	a/ 6,006				
	Second quarter.....	(S)	(S)	b/ 12,047	(S)	(S)	b/ 5,310				
	First quarter.....	(S)	(S)	(S)	(S)	(S)	b/ 5,210				
325188A124	Potassium phosphates (100 percent by weight).....	28,206	29,143	30,408	27,383	28,941	34,834				
	Fourth quarter.....	b/ 5,886	a/ 4,471	a/r/ 3,520	7,501	a/ 7,321	8,902				
	Third quarter.....	a/ 7,277	a/ 5,117	a/ 4,199	7,065	a/ 8,580	10,240				
	Second quarter.....	b/ 7,826	b/ 11,248	a/ 12,703	5,979	a/ 6,856	8,562				
	First quarter.....	a/ 7,217	a/ 8,307	9,986	a/ 6,838	a/ 6,184	7,130				
325188A141	Sodium chlorate (100 percent).....	746,056	749,301	218,916	737,122	731,118	209,126				
	Fourth quarter.....	a/ 174,397	a/ 188,699	a/ 55,465	a/ 186,298	a/ 186,477	a/ 52,899				
	Third quarter.....	a/ 207,088	a/ 190,763	a/ 55,800	a/ 180,957	a/ 180,769	a/ 51,390				
	Second quarter.....	a/ 184,367	a/ 189,773	a/ 55,504	a/ 191,867	a/ 179,467	a/ 52,153				
	First quarter.....	a/ 180,204	a/ 180,066	a/ 52,147	a/ 178,000	a/ 184,405	a/ 52,684				
325188A147	Sodium hydrosulfide (sodium sulfhydrate) (100 percent).....	(D)	(D)	(D)	(D)	(D)	(D)				
	Fourth quarter.....	(D)	(D)	(D)	(D)	(D)	(D)				
	Third quarter.....	(D)	(D)	(D)	(D)	(D)	(D)				
	Second quarter.....	(D)	(D)	(D)	(D)	(D)	(D)				
	First quarter.....	(D)	(D)	(D)	(D)	(D)	(D)				
325188A151	Sodium hydrosulfite (100 percent).....	(D)	(D)	(D)	(D)	(D)	(D)				
	Fourth quarter.....	(D)	(D)	(D)	(D)	(D)	(D)				
	Third quarter.....	(D)	(D)	(D)	(D)	(D)	(D)				
	Second quarter.....	(D)	(D)	(D)	(D)	(D)	(D)				
	First quarter.....	(D)	(D)	(D)	(D)	(D)	(D)				

Table 2. Summary of Primary Production of Specified Inorganic Chemicals: 2004 and 2003  
 [Short tons, unless otherwise noted]

Product code	Product description	2004					2003			
		Total production (quantity)	Total shipments, including interplant transfers		Total production (quantity)	Total shipments, including interplant transfers				
			Quantity	Value		Quantity	Value			
Sodium phosphates:										
325188A157	Dibasic (produced for sale) (100 percent) 6/.....	23,865	18,525	20,701	22,505	17,409	18,828			
	Fourth quarter.....	b/ 5,684	4,538	5,047	a/ 5,716	4,648	4,960			
	Third quarter.....	b/ 5,941	4,683	5,284	a/ 5,551	4,768	5,195			
	Second quarter.....	b/ 6,323	4,454	4,890	a/ 5,807	4,049	4,254			
	First quarter.....	a/ 5,917	4,850	5,480	a/ 5,431	3,944	4,419			
325188A164	Tetrabasic (pyro) (100 percent).....	(S)	(S)	(S)	(D)	(D)	(D)			
	Fourth quarter.....	(S)	(S)	(S)	(D)	(D)	(D)			
	Third quarter.....	(S)	(S)	(S)	(D)	(D)	(D)			
	Second quarter.....	(S)	(D)	(S)	(D)	(D)	(D)			
	First quarter.....	(D)	(D)	(D)	(D)	(D)	(D)			
325188A167	Meta (100 percent).....	38,529	33,954	32,777	52,023	40,904	36,536			
	Fourth quarter.....	a/ 8,697	8,367	8,169	r/ 13,793	9,683	8,361			
	Third quarter.....	a/ 9,119	7,455	7,322	11,705	9,493	8,367			
	Second quarter.....	a/ 9,030	9,071	8,807	r/ 11,922	a/ 10,043	9,071			
	First quarter.....	a/ 11,683	9,061	8,479	a/ 14,603	a/ 11,685	10,737			
325188A171	Acid pyro (100 percent).....	40,056	38,169	31,085	45,941	41,427	29,285			
	Fourth quarter.....	a/ 11,550	a/ 10,627	a/ 8,768	a/ 7,710	a/ 7,398	a/ 5,773			
	Third quarter.....	a/ 10,470	a/ 10,562	a/ 8,722	a/ 7,414	a/ 7,191	a/ 5,614			
	Second quarter.....	a/ 9,711	a/ 8,699	a/ 7,007	(S)	(S)	(S)			
	First quarter.....	a/ 8,325	a/ 8,281	a/ 6,588	(S)	(S)	(S)			
325188A174	Tripoly (100 percent).....	(D)	(D)	(D)	(D)	(D)	(D)			
	Fourth quarter.....	(D)	(D)	(D)	(D)	(D)	(D)			
	Third quarter.....	(D)	(D)	(D)	(D)	(D)	(D)			
	Second quarter.....	(D)	(D)	(D)	(D)	(D)	(D)			
	First quarter.....	(D)	(D)	(D)	(D)	(D)	(D)			
325188A177	Other sodium phosphates, including mono- and tribasic.....	(X)	(X)	22,657	(X)	(X)	r/ 17,232			
	Fourth quarter.....	(X)	(X)	6,049	(X)	(X)	5,621			
	Third quarter.....	(X)	(X)	5,906	(X)	(X)	4,141			
	Second quarter.....	(X)	(X)	(D)	(X)	(X)	r/ 4,158			
	First quarter.....	(X)	(X)	(D)	(X)	(X)	b/r/ 3,312			
325188A181	Sodium silicate (soluble silicate glass, liquid, and solid) (anhydrous) 7/.....	1,228,192	727,011	r/ 211,771	1,184,192	679,772	217,578			
	Fourth quarter.....	b/ 303,463	a/ 179,841	b/r/ 50,722	b/ 304,390	b/ 168,218	(S)			
	Third quarter.....	b/ 311,435	a/ 183,850	b/r/ 58,045	b/ 287,509	a/ 166,738	(S)			
	Second quarter.....	b/ 313,406	a/ 188,335	b/r/ 51,593	b/ 304,366	a/ 167,823	(S)			
	First quarter.....	b/ 299,888	a/ 174,985	b/r/ 51,411	b/ 287,927	a/ 176,993	(S)			
325188A184	Metasilicate pentahydrate (100 percent).....	34,273	30,184	8,807	36,435	25,019	8,843			
	Fourth quarter.....	7,717	7,215	1,852	8,756	7,197	2,323			
	Third quarter.....	9,355	8,256	2,208	9,435	6,228	2,232			
	Second quarter.....	9,407	7,410	2,389	9,343	5,726	2,121			
	First quarter.....	7,794	7,303	2,358	8,901	5,868	2,167			
325188A187	Metasilicate anhydrous (100 percent).....	29,235	29,106	10,317	30,340	34,887	10,954			
	Fourth quarter.....	6,960	7,231	2,864	7,975	7,141	2,403			
	Third quarter.....	6,909	6,669	2,673	7,893	9,118	2,782			
	Second quarter.....	r/ 6,362	7,595	2,467	7,024	9,390	2,868			
	First quarter.....	9,004	7,611	2,313	7,448	9,238	2,901			
325188A1A1	Sodium sulfate (100 percent): High purity.....	515,167	421,932	25,055	513,350	456,272	27,253			
	Fourth quarter.....	b/ 124,923	b/ 116,375	b/ 8,149	a/ 130,076	b/ 102,443	b/ 5,833			
	Third quarter.....	b/ 139,216	b/ 104,730	b/ 5,674	a/ 129,302	b/ 118,365	b/ 7,238			
	Second quarter.....	b/ 132,782	b/ 100,853	b/ 5,610	115,931	b/ 112,889	b/ 6,855			
	First quarter.....	b/ 118,246	b/ 99,974	b/r/ 5,622	b/ 138,041	b/ 122,575	b/ 7,327			
325188A1A7	Sodium sulfite (100 percent).....	95,245	r/ 80,438	9,730	97,853	r/ 90,668	r/ 10,267			
	Fourth quarter.....	b/ 22,257	a/r/ 22,485	b/ 2,935	b/ 22,923	a/ 27,933	b/ 3,069			
	Third quarter.....	b/ 25,885	r/ 23,413	b/ 2,594	b/ 26,265	a/ 23,274	b/ 3,182			
	Second quarter.....	b/ 24,325	r/ 18,362	b/ 2,066	b/ 25,967	(D)	(D)			
	First quarter.....	b/ 22,778	a/r/ 16,178	b/ 2,135	b/ 22,698	(D)	(D)			
Other inorganic chemicals:										
325188G141	Calcium carbonate (precipitated) (100 percent).....	2,122,757	2,066,053	267,107	2,144,864	2,072,391	269,382			
	Fourth quarter.....	a/ 561,419	a/ 547,291	a/ 70,086	a/ 531,577	a/ 512,445	a/ 65,130			
	Third quarter.....	a/ 537,061	a/ 522,389	a/ 67,587	a/ 531,464	a/ 515,342	a/ 66,937			
	Second quarter.....	a/ 520,005	505,303	65,816	522,468	506,077	66,026			
	First quarter.....	a/ 504,272	491,070	63,618	559,355	538,527	71,289			

Table 2. Summary of Primary Production of Specified Inorganic Chemicals: 2004 and 2003  
 [Short tons, unless otherwise noted]

Product code	Product description	2004				2003			
		Total production (quantity)	Total shipments, including interplant transfers		Total production (quantity)	Total shipments, including interplant transfers			
			Quantity	Value		Quantity	Value		
325188G144	Calcium chloride (100 percent).....	1,747,206	900,649	139,553	1,163,396	820,913	115,357		
	Fourth quarter.....	a/ 411,484	b/r/ 265,261	b/r/ 41,926	(D)	b/ 251,031	a/ 37,846		
	Third quarter.....	b/ 415,837	b/ 208,284	b/ 32,926	a/ 261,639	b/ 173,015	b/ 23,301		
	Second quarter.....	a/ 444,503	b/ 211,343	b/ 29,589	a/ 335,991	b/ 186,851	b/ 22,739		
	First quarter.....	a/ 475,382	b/ 215,761	b/ 35,112	(D)	b/ 210,016	b/ 31,471		
325188G147	Calcium phosphates: Monobasic (21 percent minimum P) (100 percent).....	803,948	853,805	184,700	811,935	847,187	178,467		
	Fourth quarter.....	209,613	264,548	a/ 55,624	227,473	229,071	r/ 50,094		
	Third quarter.....	(D)	213,746	a/ 46,523	(D)	210,734	41,573		
	Second quarter.....	221,480	187,885	41,151	211,846	192,600	40,696		
	First quarter.....	(D)	187,626	r/ 41,402	(D)	a/ 214,782	a/ 46,104		
325188G151	Dibasic (18.5 percent minimum P) (100 percent).....	310,928	294,463	80,163	336,702	323,880	r/ 116,225		
	Fourth quarter.....	78,256	77,053	20,157	86,061	86,528	r/ 24,445		
	Third quarter.....	65,497	69,513	18,885	73,222	77,320	a/r/ 23,746		
	Second quarter.....	81,024	71,536	19,630	90,163	75,590	a/r/ 24,258		
	First quarter.....	86,151	76,361	a/r/ 21,491	87,256	a/ 84,381	a/ 25,623		
3253124241	Tribasic (defluorinated phosphate rock) (18.0 percent minimum P) 8/ Animal feed grade (defluorinated phosphate rock) (100 percent).....	305,658	313,026	r/ 80,192	356,986	383,528	85,489		
	Fourth quarter.....	(D)	(D)	18,915	79,633	90,122	20,428		
	Third quarter.....	(D)	(D)	20,002	89,789	99,162	a/ 22,388		
	Second quarter.....	76,014	72,765	17,836	95,088	89,768	a/ 20,374		
	First quarter.....	94,453	96,077	r/ 23,439	92,476	104,476	22,299		
325998H1E4	Carbon, activated 9/ Granular carbons (dry weight) 10/.....	(D)	(D)	(D)	r/ 67,058	(D)	(D)		
	Fourth quarter.....	(D)	(D)	(D)	(D)	(D)	(D)		
	Third quarter.....	(D)	(D)	(D)	(D)	(D)	(D)		
	Second quarter.....	(D)	(D)	(D)	b/ 27,630	(S)	(S)		
	First quarter.....	(D)	(D)	(D)	(S)	(S)	(S)		
325998H1E7	Pulverized carbons (dry weight).....	39,262	(D)	(D)	56,051	100,030	40,236		
	Fourth quarter.....	a/ 9,527	(D)	(D)	a/ 12,308	(D)	(D)		
	Third quarter.....	a/ 10,154	(D)	(D)	a/ 9,073	(D)	(D)		
	Second quarter.....	a/ 10,221	(D)	(D)	(S)	b/ 24,812	a/ 11,015		
	First quarter.....	a/ 9,360	(D)	(D)	(S)	b/ 26,563	b/ 11,410		
325188G181	Hydrogen peroxide (100 percent by weight).....	393,663	318,242	156,209	374,879	284,340	158,459		
	Fourth quarter.....	b/ 115,762	(S)	(S)	b/ 92,885	b/ 68,386	(S)		
	Third quarter.....	b/ 106,853	(S)	(S)	b/ 93,465	b/ 74,636	(S)		
	Second quarter.....	b/ 81,578	b/ 68,880	b/ 33,466	b/ 93,306	b/ 70,251	b/ 32,661		
	First quarter.....	b/ 89,470	b/ 65,570	b/ 32,018	b/ 95,223	b/ 71,067	b/ 32,318		
325188G184	Iodine (100 percent) (quantity in pounds).....	3,209,966	(D)	37,544	(D)	(D)	31,834		
	Fourth quarter.....	(D)	(D)	9,739	(D)	(D)	5,691		
	Third quarter.....	(D)	(D)	9,548	(D)	(D)	9,142		
	Second quarter.....	788,588	(D)	(S)	(D)	(D)	8,295		
	First quarter.....	(D)	(D)	(S)	(D)	(D)	8,706		
325188G187	Ferric chloride (100 percent).....	241,782	252,812	(S)	217,696	217,889	(S)		
	Fourth quarter.....	(S)	(S)	(S)	a/ 74,680	a/ 69,995	(S)		
	Third quarter.....	(S)	(S)	(S)	a/ 73,216	a/ 74,610	(S)		
	Second quarter.....	(S)	(S)	(S)	a/ 69,800	b/ 73,284	(S)		
	First quarter.....	b/ 69,792	b/r/ 63,836	(S)	a/ 64,414	a/ 64,340	(S)		
325188G191	Iron oxides and hydroxides, excluding iron oxide pigments (100 percent).....	(D)	(D)	(D)	(D)	(D)	(D)		
	Fourth quarter.....	(D)	(D)	(D)	(D)	(D)	(D)		
	Third quarter.....	(D)	(D)	(D)	(D)	(D)	(D)		
	Second quarter.....	(D)	(D)	(D)	(D)	(D)	(D)		
	First quarter.....	(D)	(D)	(D)	(D)	(D)	(D)		
325188G1A1	Magnesium chloride (100 percent).....	(D)	(D)	19,811	(D)	(D)	16,201		
	Fourth quarter.....	(D)	(D)	5,442	(D)	(D)	4,674		
	Third quarter.....	(D)	(D)	4,798	(D)	(D)	3,863		
	Second quarter.....	(D)	(D)	4,776	(D)	(D)	3,142		
	First quarter.....	(D)	(D)	4,795	(D)	(D)	4,522		
325188G1B1	Manganese dioxide (100 percent).....	61,971	65,844	83,580	45,677	47,916	66,875		
	Fourth quarter.....	15,136	14,528	r/ 18,390	9,137	13,428	19,889		
	Third quarter.....	16,902	18,504	22,041	9,205	11,641	18,042		
	Second quarter.....	16,592	15,607	20,447	13,543	11,907	15,080		
	First quarter.....	13,341	17,205	22,702	13,792	10,940	13,864		

Table 2. Summary of Primary Production of Specified Inorganic Chemicals: 2004 and 2003  
 [Short tons, unless otherwise noted]

Product code	Product description	2004			2003		
		Total production (quantity)	Total shipments, including interplant transfers		Total production (quantity)	Total shipments, including interplant transfers	
			Quantity	Value		Quantity	Value
325188G1F1	Phosphorus oxychloride (100 percent).....	(D)	(D)	(D)	(D)	(D)	(D)
	Fourth quarter.....	(D)	(D)	(D)	(D)	(D)	(D)
	Third quarter.....	(D)	(D)	(D)	(D)	(D)	(D)
	Second quarter.....	(D)	(D)	(D)	(D)	(D)	(D)
	First quarter.....	(D)	(D)	(D)	(D)	(D)	(D)
325188G1F7	Phosphorus trichloride (chloride) (100 percent).....	(D)	(D)	(D)	(D)	(D)	(D)
	Fourth quarter.....	(D)	(D)	(D)	(D)	(D)	(D)
	Third quarter.....	(D)	(D)	(D)	(D)	(D)	(D)
	Second quarter.....	(D)	(D)	(D)	(D)	(D)	(D)
	First quarter.....	(D)	(D)	(D)	(D)	(D)	(D)
325188G1G7	Silicon tetrachloride (sitet) (100 percent SiCl4).....	(D)	(D)	(S)	(S)	(S)	(S)
	Fourth quarter.....	(D)	(D)	(S)	(S)	(S)	(S)
	Third quarter.....	(D)	(D)	(S)	(S)	(S)	(S)
	Second quarter.....	(D)	(D)	(S)	(S)	(S)	(S)
	First quarter.....	(D)	(D)	(S)	(S)	(S)	(S)
325188G1K1	Sulfur dioxide (100 percent).....	70,215	60,184	r/ 8,937	82,330	74,162	10,800
	Fourth quarter.....	17,213	13,870	a/r/ 2,055	20,870	17,827	a/ 2,689
	Third quarter.....	17,421	15,233	a/r/ 2,225	22,042	20,409	a/ 3,042
	Second quarter.....	15,776	14,092	b/r/ 2,192	20,067	18,089	a/ 2,474
	First quarter.....	b/ 19,805	b/ 16,989	(S)	19,351	17,837	a/ 2,595
325188G1M1	Zinc sulfate (100 percent).....	35,424	(D)	18,326	(D)	(D)	19,322
	Fourth quarter.....	a/ 9,489	(D)	a/ 4,958	(D)	(D)	4,362
	Third quarter.....	a/ 9,067	(D)	a/ 4,852	(D)	(D)	4,926
	Second quarter.....	(D)	(D)	r/ 3,883	(D)	(D)	4,652
	First quarter.....	(D)	(D)	4,633	(D)	(D)	5,382
3251311100	Titanium dioxide (composite and pure) (commodity weight) 11/.....	(NA)	(X)	(X)	1,567,955	(X)	(X)
	Fourth quarter.....	(NA)	(X)	(X)	403,121	(X)	(X)
	Third quarter.....	(NA)	(X)	(X)	381,574	(X)	(X)
	Second quarter.....	(NA)	(X)	(X)	402,339	(X)	(X)
	First quarter.....	(NA)	(X)	(X)	380,921	(X)	(X)

D Withheld to avoid disclosing data for individual companies. NA Not available. r/Revised by 5 percent or more from previously published data. S Does not meet publication standards. X Not applicable.

1/Production includes amounts liquefied.

2/Liquid production data represent total production, including quantities later evaporated to solid caustic.

3/Source: U.S. Geological Survey. Quantity reported in thousands of short tons.

4/Includes production from salt and acid.

5/Excludes quantities produced and consumed in municipalities.

6/Represents quantities produced only for sale or interplant transfer.

7/Excludes amounts produced and consumed in making meta, ortho, and sesquisilicates.

8/Includes animal feed, but excludes other grades and superphosphate or other fertilizer materials.

9/Excludes reactivated carbon.

10/Includes pelleted carbon.

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

Note: 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 3. Production, Exports, Imports, and Apparent Consumption of Selected Inorganic Chemicals: 2004 and 2003  
[Quantity in metric tons]

Product code	Product description	Year	Production (quantity)	Exports of domestic merchandise 1/	Imports for consumption 2/	Apparent consumption 3/ (quantity)	Percent imports to apparent consumption
							(quantity)
3251811111	Chlorine gas.....	2004	12,329,081	10,448	470,883	12,789,516	3.7
		2003	10,361,370	15,360	412,116	10,758,126	3.8
3251814111	Sodium hydroxide, total liquid (all processes).....	2004	9,619,616	2,915,480	1,130,658	7,834,794	14.4
		2003	8,796,486	3,090,651	1,127,456	6,833,291	16.5
3251817111	Potassium hydroxide, liquid.....	2004	525,328	249,577	15,251	291,002	5.2
		2003	470,984	182,186	19,290	308,088	6.3
3251817131	Finished sodium bicarbonate.....	2004	578,587	68,970	16,647	526,264	3.2
		2003	540,308	61,048	15,724	494,984	3.2
3251884125, 131	Hydrochloric acid.....	2004	r/ 5,301,642	58,334	119,386	5,362,694	2.2
		2003	(S)	61,039	106,794	(S)	(S)
3313110100	Aluminum oxide.....	2004	(D)	1,179,876	1,508,511	(D)	(D)
		2003	(D)	1,046,160	2,160,909	(D)	(D)
3251887121	Aluminum chloride.....	2004	(S)	12,477	1,174	(S)	(S)
		2003	(S)	14,806	883	(S)	(S)
3251887131	Aluminum hydroxide, trihydrate.....	2004	r/ 804,683	73,332	221,204	952,555	23.2
		2003	444,984	65,182	231,675	611,477	37.9
3251887151	Aluminum sulfate (commercial).....	2004	r/ 991,757	9,632	5,992	988,117	0.6
		2003	964,776	9,213	5,359	960,922	0.6
3251887171	Aluminates.....	2004	345,285	28,964	9,744	326,065	3.0
		2003	359,340	20,033	17,159	356,466	4.8
325188A111	Potassium iodide.....	2004	307	133	891	1,065	83.7
		2003	339	67	862	1,134	76.0
325188A124	Potassium phosphate.....	2004	25,588	1,850	15,982	39,720	40.2
		2003	24,841	1,953	15,602	38,490	40.5
325188A141	Sodium chlorate.....	2004	676,811	21,153	593,146	1,248,804	47.5
		2003	668,706	20,831	561,813	1,209,688	46.4
325188A174	Sodium phosphate tripoly.....	2004	(D)	8,655	121,101	(D)	(D)
		2003	(D)	10,900	109,147	(D)	(D)
325188A181	Sodium silicates (other than metasilicates).....	2004	1,114,197	60,580	35,189	1,088,806	3.2
		2003	1,074,281	49,082	28,279	1,053,478	2.7
325188A184, 187	Sodium metasilicates.....	2004	57,613	16,420	422	41,615	1.0
		2003	60,577	17,558	480	43,499	1.1
325188A1A7	Sodium sulfite.....	2004	86,405	38,837	30,085	77,653	38.7
		2003	88,771	25,815	17,404	80,360	21.7
325188G141	Calcium carbonate (precipitated).....	2004	1,925,733	90,492	30,248	1,865,489	1.6
		2003	1,945,788	70,496	35,684	1,910,976	1.9
325188G144	Calcium chloride.....	2004	1,585,039	98,243	241,606	1,728,402	14.0
		2003	1,055,415	115,237	256,367	1,196,545	21.4
325998H1E4, 1E7	Carbon activated (granular and pulverized).....	2004	(D)	45,185	66,843	(D)	(D)
		2003	111,683	51,462	56,867	117,088	48.6
325188G181	Hydrogen peroxide.....	2004	357,125	50,235	43,602	350,492	12.4
		2003	340,085	42,130	46,253	344,208	13.4
325188G184	Iodine.....	2004	2,912,033	1,057	5,700	2,916,676	0.2
		2003	(D)	1,225	5,744	(D)	(D)



Table 3. Production, Exports, Imports, and Apparent Consumption of Selected Inorganic Chemicals: 2004 and 2003  
 [Quantity in metric tons]

Product code	Product description	Year	Production (quantity)	Exports of domestic merchandise 1/	Imports for consumption 2/	Apparent consumption 3/ (quantity)	Percent imports to apparent consumption (quantity)
325188G191	Iron oxides and hydroxides.....	2004	(D)	72,761	8,307	(D)	(D)
		2003	(D)	48,781	2,884	(D)	(D)
325188G1A1	Magnesium chloride.....	2004	(D)	5,115	83,761	(D)	(D)
		2003	(D)	8,153	60,406	(D)	(D)
325188G1B1	Manganese dioxide.....	2004	56,092	3,998	26,443	78,537	33.7
		2003	41,437	4,466	49,354	86,325	57.2
325188G1F1, 1F7	Phosphorous, oxychloride and trichloride.....	2004	(D)	207	1,116	(D)	(D)
		2003	(D)	347	56	(D)	(D)
325188G1K1	Sulfur dioxide.....	2004	63,698	3,352	52,641	112,987	46.6
		2003	74,689	7,937	54,848	121,600	45.1
325188G1M1	Zinc sulfate.....	2004	32,136	3,087	29,141	58,190	50.1
		2003	(D)	2,311	25,803	(D)	(D)
3251311100	Titanium dioxide (composite and pure).....	2004	(NA)	635,434	263,527	(NA)	(NA)
		2003	1,422,425	584,436	240,349	1,078,338	22.3

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

1/Source: Census Bureau report EM 545, U.S. Exports (see Table 4).

2/Source: Census Bureau report IM 145, U.S. Imports for Consumption (see Table 4).

3/Apparent consumption represents new domestic supply and is derived by subtracting exports from the total of manufacturers' production plus imports.

Table 4. Comparison of North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes and HTSUSA Import Codes: 2004

Product code	Product description	Export code 1/	Import code 2/
3251881111	Chlorine gas.....	2801.10.0000	2801.10.0000
3251814111	Sodium hydroxide, total liquid (all processes).....	2815.11.0000 2815.12.0000	2815.11.0000 2815.12.0000
3251817111	Potassium hydroxide, liquid.....	2815.20.0050 2815.20.0090	2815.20.0050 2815.20.0090
3251817131	Finished sodium bicarbonate.....	2836.30.0000	2836.30.0000
3251884125, 131	Hydrochloric acid.....	2806.10.0000	2806.10.0000
3313110100	Aluminum oxide.....	2818.20.0000	2818.20.0000
3251887121	Aluminum chloride.....	2827.32.0000	2827.32.0000
3251887131	Aluminum hydroxide, trihydrate.....	2818.30.0000	2818.30.0000
3251887151	Aluminum sulfate (commercial).....	2833.22.0000	2833.22.0000
3251887171	Aluminates.....	2841.10.0000	2841.10.0000
325188A111	Potassium iodide.....	2827.60.2000	2827.60.2000
325188A124	Potassium phosphate.....	2835.24.0000	2835.24.0000
325188A141	Sodium chlorate.....	2829.11.0000	2829.11.0000
325188A174	Sodium phosphate tripoly.....	2835.31.0000	2835.31.0000
325188A181	Sodium silicates (other than metasilicates).....	2839.19.0000	2839.19.0000
325188A184, 187	Sodium metasilicates.....	2839.11.0000	2839.11.0000
325188A1A7	Sodium sulfite.....	2832.10.0000	2832.10.0000
325188G141	Calcium carbonate (precipitated).....	2836.50.0000	2836.50.0000
325188G144	Calcium chloride.....	2827.20.0000	2827.20.0000
325998H1E4, 1E7	Carbon activated (granular and pulverized).....	3802.10.0000	3802.10.0000
325188G181	Hydrogen peroxide.....	2847.00.0000	2847.00.0000
325188G184	Iodine.....	2801.20.0000	2801.20.0000
325188G191	Iron oxides and hydroxides.....	2821.10.0050	2821.10.0050
325188G01A1	Magnesium chloride.....	2827.31.0000	2827.31.0000
325188G01B1	Manganese dioxide.....	2820.10.0000	2820.10.0000
325188G1F1, 1F7	Phosphorous, oxychloride and trichloride.....	2812.10.5010	2812.10.5010
325188G1K1	Sulfur dioxide.....	2811.23.0000	2811.23.0000
325188G1M1	Zinc sulfate.....	2833.26.0000	2833.26.0000
3251311100	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: 2004 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 (2004).

# Appendix.

## General CIR Survey Information, Explanation of General Terms and Historical Note

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### GENERAL

The CIR program has been providing monthly, quarterly, and annual measures of industrial activity for many years. Since 1904, with its cotton and fats and oils surveys, the CIR program has formed an essential part of an integrated statistical system involving the quinquennial economic census, manufacturing sector, and the annual survey of manufactures. The CIR surveys, however, provide current statistics at a more detailed product level than either of the other two statistical programs.

The primary objective of the CIR program is to produce timely, accurate data on production and shipments of selected products. The data are used to satisfy economic policy needs and for market analysis, forecasting, and decision making in the private sector. The product-level data generated by these surveys are used extensively by individual firms, trade associations, and market analysts in planning or recommending marketing and legislative strategies, particularly if their industry is significantly affected by foreign trade. Although production and shipments information are the two most common data items collected, the CIR program collects other measures also such as inventories, orders, and consumption. These surveys measure manufacturing activity in important commodity areas such as textiles and apparel, chemicals, primary metals, computer and electronic components, industrial equipment, aerospace equipment, and consumer goods.

The CIR program uses a unified data collection, processing, and publication system. The U.S. 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 census, manufacturing sector. The manufacturing sector 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 too 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. The CIR program includes a group of mandatory and voluntary surveys. Typically the monthly and quarterly surveys are conducted on a voluntary basis. Those companies that choose not to respond to the voluntary surveys are required to submit a mandatory annual counterpart corresponding to the more frequent survey.

### NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS), 1997

The adoption of the North American Industry Classification System (NAICS) in the 1997 Economic Census has had a major impact on the comparability of current and historic data. 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.

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 that left manufacturing are logging and portions of publishing. Prominent among the industries that came into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. The net effect of the classification changes are such that if the 1997 value of shipments data for all manufacturers were tabulated on an SIC basis, it would be approximately 3 percent higher.

Listed below are the 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 Food Services
- 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.)

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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).

## FUNDING

The Census Bureau funds most of the surveys. However, a number of surveys are paid for either fully or partially by other Federal Government agencies or private trade associations. A few surveys are mandated, but all are authorized by Title 13 of the United States Code.

## RELIABILITY OF DATA

Survey error may result from several sources including the inability to obtain information about all cases in the survey, response errors, definitional difficulties, differences in the interpretation of questions, mistakes in recording or coding the reported data, and other errors of collection, response, coverage, and estimation. These nonsampling errors also occur in complete censuses. Although no direct measurement of the biases due to these nonsampling errors has been obtained, precautionary steps were taken in all phases of the collection, processing, and tabulation of the data in an effort to minimize their influence.

A major source of bias in the published estimates is the imputing of data for nonrespondents, for late reporters, and for data that fail logic edits. Missing figures are imputed based on period-to-period movements shown by reporting firms. A figure is considered to be an impute if the value was not directly reported on the questionnaire, directly derived from other reported items, directly available from supplemental sources, or obtained from the respondent during the analytical review phase. Imputation generally is limited to a maximum of 10 percent for any one data cell. Figures with imputation rates greater than 10 percent are suppressed or footnoted. The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual yearly movements for nonrespondents may or may not closely agree with the imputed movements. The range of difference between the actual and imputed figures is assumed to be small. The degree of uncertainty regarding the accuracy of the published data increases as the percentage of imputation increases. Figures with imputation rates above 10 percent should be used with caution.

## DATA REVISIONS

Statistics for previous years may be revised as the result of corrected figures from respondents, late reports for which imputations were originally made, or other corrections. Data that have been revised by more than 5 percent from previously published data are indicated by footnotes.

## DISCLOSURE

The Census Bureau collects the CIR data under the authority of Title 13, United States Code, which specifies that the information can only be used for statistical purposes and cannot be published or released in any manner that would identify a person, household, or establishment. "D" indicates that data in the cell have been suppressed to avoid disclosure of information pertaining to individual companies.

## EXPLANATION OF GENERAL TERMS

**Capacity.** The maximum quantity of a product that can be produced in a plant in 1 day if operating for 24 hours. Includes the capacity of idle plants until the plant is reported to be destroyed, dismantled, or abandoned.

**Consumption.** Materials used in producing or processing a product or otherwise removing the product from the inventory.

**Exports.** Includes all types of products shipped to foreign countries, or to agents or exporters for reshipment to foreign countries.

**Gross shipments.** The quantity or value of physical shipments from domestic establishments of all products sold, transferred to other establishments of the same company, or shipped on consignment, whether for domestic or export sale or use. Shipments of products purchased for resale are omitted. Shipments of products made under toll arrangements are included.

**Interplant transfers.** Shipments to other domestic plants within a company for further assembly, fabrication, or manufacture.

**Inventories.** The quantity or value of finished goods, work in progress, and materials on hand.

**Machinery in place.** The number of machines of a particular type in place as of a particular date whether the machinery was used for production, prototype, or sampling, or was idle. Machinery in place includes all machinery set up in operating positions.

**Net receipts.** Derived by subtracting the materials held at the end of the previous month from the sum of materials used during the current month.

**Production.** The total volume of products produced, including: products sold; products transferred or added to inventory after adjustments for breakage, shrinkage, and obsolescence, plus any other inventory adjustment; and products that undergo further manufacture at the same establishment.

**Quantities produced and consumed.** Quantities of each type of product produced by a company for internal consumption within that same company.

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**Quantity and value of new orders.** The sales value of orders received during the current reporting period for products and services to be delivered immediately or at some future date. Also represents the net sales value of contract change documents that increase or decrease the sales value of the orders to which they are related, when the parties concerned are in substantial agreement as to the amount involved. Included as orders are only those that are supported by binding legal documents such as signed contracts or letter contracts.

**Quantity and value of shipments.** The figures on quantity and value of shipments represent physical shipments of all products sold, transferred to other establishments of the same company, or shipped on consignment, whether for domestic or export sale. The value represents the net sales price, f.o.b. plant, to the customer or branch to which the products are shipped, net of discounts, allowances, freight charges, and

returns. Shipments to a company's own branches are assigned the same value as comparable appropriate allocation of company overhead and profit. Products bought and resold without further manufacture are excluded.

**Stocks.** Total quantity of ending finished inventory.

**Unfilled orders (backlog).** Calculated by adding net new orders and subtracting net sales from the backlog at the end of the preceding year.

#### **HISTORICAL NOTE**

Data on inorganic chemicals have been collected by the Census Bureau since 1941. Historical data may be obtained from Current Industrial Reports (called Facts for Industry before 1959) available at your local Federal Depository Library.