

# Mineral Industry Surveys

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## SODA ASH IN DECEMBER 2023

In December, soda ash production was 952,000 metric tons (t), essentially unchanged from the previous month's production (revised), and a slight decrease compared with that in December 2022 (tables 1, 4). For 2023, soda ash production was 10.9 million metric tons (Mt), 3% less than the production for 2022. Ending stocks in December were 251,000 t, 21% less than those in November 2023.

Wyoming trona production in December 2023 was 1.66 Mt, 6% more than the trona production in November 2023 (revised) and 9% more than that in December 2022. For 2023, trona production was 17.7 Mt, essentially unchanged compared with 2022 (table 1).

Exports of soda ash increased by 11% in December 2023 to 621,000 t, compared with those in November 2023 and were 8% more than those in December 2022. For 2023, exports were 6.65 Mt, 3% more than the amount for 2022 (tables 2, 4). Imports of soda ash in December 2023 were 421 t compared with 568 t in November 2023. Soda ash import tonnages can differ significantly from month to month, but generally are much smaller than export tonnages (tables 3, 4).

Apparent consumption in December 2023 was 400,000 t, 14% more than that in November 2023 (revised) and 7% more than that in December 2022. For 2023, apparent consumption was 4.38 Mt, 8% less than the total for 2022. Apparent consumption can change significantly from month to month, mostly owing to variation in the quantity of exports but usually stabilizes over the course of the year (table 4).

Table 5 provides reported U.S. soda ash consumption statistics. Reported consumption for the fourth quarter of 2023 was 1.05 Mt, 10% less than the reported consumption for the fourth quarter of 2022. During the fourth quarter of 2023, there was 462,000 t (44%) consumed for glassmaking and 316,000 t (30%) was consumed in the production of chemicals. Reported consumption in 2023 was 4.46 Mt, 4% less than reported consumption in 2022. Reported consumption for glassmaking decreased by nearly 200,000 t in 2023, or 9%, compared with that in 2022. More than half of this decrease was within the flat glass segment.

All percentages in this report were calculated using unrounded data.

**Note:** The annual average value of U.S. soda ash production for 2023 was \$191.85 per short ton (\$211.48 per metric ton), an 18% increase compared with the 2022 average value of \$161.95 per short ton (\$178.52 per metric ton). The 2023 average value sets a record high amount for the second consecutive year.

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TABLE 1  
SALIENT SODA ASH STATISTICS<sup>1</sup>

(Thousand metric tons)

Period	Soda ash		Wyoming trona production
	Production <sup>2</sup>	Stocks, end of period	
2022:			
December	968	364	1,520
January–December	11,300	364	17,500
2023:			
January	884	303	1,240
February	831	309	1,340
March	868	231	1,520
April	906	250	1,470
May	991	297	1,650
June	934	328	1,490
July	942	368	1,520
August	869	312	1,340
September	874	254	1,390
October	847	263	1,470
November	965 <sup>r</sup>	319	1,570 <sup>r</sup>
December	952	251	1,660
January–December	10,900	251	17,700

<sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Production data include soda ash equivalent from soda liquors only. Soda ash equivalent from mine water is not included. Soda liquors are withheld to avoid disclosing company proprietary data.

TABLE 2  
U.S. EXPORTS OF SODA ASH BY COUNTRY OR LOCALITY, IN 2023<sup>1</sup>

(Metric tons unless otherwise specified)

Country or locality	January	February	March	April	May	June	July	August	September	October	November	December			January-December		
												Quantity	Value <sup>2</sup> (thousand dollars)	Unit value	Quantity	Percent of total quantity	Value <sup>2</sup> (thousand dollars)
Argentina	17,000	17,500	16,500	30,100	24,500	77	37,000	2,040	18,000	1,500	32,100	5,500	3,110	\$565	202,000	3	89,400
Australia	28,000	--	35,000	9	35,000	27,000	27	35,000	5,000	22,000	--	32,900	11,500	350	220,000	3	78,500
Brazil	122,000	32,800	59,300	24,000	74,500	63,400	71,300	--	83,100	53,300	41,600	57,700	13,300	231	683,000	10	218,000
Canada	15,500	18,300	16,800	16,600	14,500	14,700	12,000	14,900	12,500	14,700	12,800	14,800	5,080	342	178,000	3	50,400
Chile	38,100	82,100	64,900	47,300	74,300	61,600	91,600	60,000	56,100	44,100	78,900	86,300	34,500	400	785,000	12	265,000
China	14	4,800	61,900	--	20,000	--	--	35,000	74,400	41,900	22,000	112,000	21,400	192	372,000	6	73,100
Colombia	18,300	40,300	11,900	500	8,000	20,300	8,000	13,500	--	19,500	9,500	4,000	801	200	154,000	2	46,500
India	31,100	3,050	1,920	5,110	43,200	22,600	21,100	20,300	23,000	26,600	23,100	4,050	829	205	225,000	3	54,200
Indonesia	22,500	53,200	13,700	55,200	47,900	63,500	72,200	35,000	18,500	38,800	66,500	39,900	10,700	268	527,000	8	153,000
Japan	15,500	22,700	10,100	4,800	34,400	20,200	20,900	22,200	18,000	--	16,500	22,200	7,940	358	208,000	3	77,800
Korea, Republic of	15,000	32,000	10,900	7,220	40,100	5,010	29,500	16,100	31,100	18,200	29,600	5,180	1,280	247	240,000	4	69,200
Malaysia	19,800	22,200	26,800	--	27,500	20,100	9,000	36,000	65,200	37,900	12,000	22,000	4,470	203	298,000	4	82,500
Mexico	133,000	121,000	153,000	142,000	117,000	114,000	112,000	95,000	110,000	103,000	96,600	102,000	28,300	277	1,400,000	21	385,000
Peru	7,500	11,000	5,250	17,300	300	391	406	8,700	641	391	9,000	891	224	251	61,800	1	20,700
Taiwan	13,000	15,000	14,000	221	42,500	11,500	--	25,000	--	--	23,200	20,500	5,440	265	165,000	2	53,800
Thailand	28,500	15,500	10,200	24,100	507	41,300	27,900	2,400	16,900	15,200	34,700	6,850	2,060	301	224,000	3	66,700
United Arab Emirates	12,000	676	27	676	--	--	--	26,300	--	--	--	--	--	--	39,600	1	12,100
Vietnam	14,800	69,200	2,500	59,900	2,000	15,300	28,900	32,300	28,100	21,200	45,500	28,900	5,910	205	349,000	5	93,900
Other	25,600	11,800	8,150	13,400	9,910	40,000	41,000	46,900	21,700	36,000	6,280	56,000	12,200	218	317,000	5	85,000
Total	577,000	573,000	523,000	448,000	616,000	541,000	583,000	527,000	583,000	494,000	560,000	621,000	169,000	272	6,650,000	100	1,980,000

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Free alongside ship values at U.S. ports.

Source: U.S. Census Bureau.

TABLE 3  
U.S. IMPORTS OF SODA ASH BY COUNTRY OR LOCALITY, IN 2023<sup>1</sup>

(Metric tons unless otherwise specified)

Country or locality	January	February	March	April	May	June	July	August	September	October	November	December			January–December		
												Quantity	Value <sup>2</sup> (thousand dollars)	Unit value	Quantity	Percent of total quantity	Value <sup>2</sup> (thousand dollars)
Canada	173	175	239	167	171	163	190	248	292	160	235	159	15	\$96	2,370	5	327
France	20	241	139	100	20	--	113	39	20	59	20	--	--	--	769	2	1,320
Germany	80	51	2	(3)	2	22	2	6	28	2	55	(3)	9	163	250	1	702
India	56	30	6	26	1	1	4	29	20	20	42	23	30	1,260	258	1	341
Italy	72	72	60	72	36	72	90	36	90	180	36	--	--	--	816	2	779
Japan	5	1	20	2	22	2	2	18	--	2	2	--	--	--	76	0	410
Mexico	98	116	200	20	236	315	193	178	60	42	1	100	55	556	1,560	3	874
Turkey	--	70	--	70	70	36,700 <sup>3</sup>	--	--	--	--	--	2	1	597	36,900	83	8,050
United Kingdom	89	71	72	52	154	65	213	143	142	35	142	107	83	781	1,280	3	1,070
Other	10	20	48	29	45	5	30	35	45	87	35	30	79	2,620	419	1	992
Total	603	845	785	538	756	37,400 <sup>1</sup>	836	731	696	587	568	421	272	648	44,700	100	14,900

<sup>1</sup>Revised. -- Zero.

<sup>2</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>3</sup>Cost, insurance, and freight values at U.S. ports.

<sup>3</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 4  
U.S. APPARENT CONSUMPTION OF SODA ASH<sup>1</sup>

(Metric tons)

Period	Production	Exports	Imports	Net stock		Apparent consumption <sup>2</sup>
				Increase	Decrease	
2022:						
January–December	11,300,000	6,490,000	61,500	85,900	--	4,740,000
December	968,000	577,000	608	17,100	--	374,000
2023:						
January–December	10,900,000	6,650,000	44,700	--	113,000	4,380,000
January	884,000	577,000	603	--	60,200	368,000
February	831,000	573,000	845	6,050	--	253,000
March	868,000	523,000	785	--	77,900	424,000
April	906,000	448,000	538	18,600	--	439,000
May	991,000	616,000	756	47,300	--	329,000
June	934,000	541,000	37,400 <sup>r</sup>	31,100	--	400,000 <sup>r</sup>
July	942,000	583,000	836	39,100	--	321,000
August	869,000	527,000	731	--	55,600	399,000
September	874,000	583,000	696	--	58,400	351,000
October	847,000	494,000	587	9,720	--	343,000
November	965,000 <sup>r</sup>	560,000	568	55,800	--	350,000 <sup>r</sup>
December	952,000	621,000	421	--	68,400	400,000

<sup>r</sup>Revised. -- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Production plus imports minus exports plus or minus stock changes.

TABLE 5  
REPORTED CONSUMPTION OF SODA ASH IN THE UNITED STATES, BY END USE, BY QUARTER<sup>1</sup>

(Thousand metric tons)

NAICS <sup>2</sup> code	End use	2022					2023				
		1st quarter	2d quarter	3d quarter	4th quarter	1st quarter- 4th quarter	1st quarter	2d quarter	3d quarter	4th quarter	1st quarter- 4th quarter
3272	Glass:										
327213	Container	267	263	251	239	1,020	273	266	227	192	958
327211	Flat	249	249	253	251	999	225	230	215	221	891
327993	Fiber	44	39	43	43	169	40	36	35	36	147
327212	Other	17	18	16	11	62	13	15	15	13	56
	Total	574	569	564	543	2,250	551	547	492	462	2,050
32518	Chemicals	306	335	312	323	1,280	313	344	336	316	1,310
325611	Soaps and detergents	56	59	51	55	221	53	59	54	52	218
322	Pulp and paper	8	8	8	6	31	9	10	10	9	38
221310	Water treatment <sup>3</sup>	10	10	11	9	40	10	12	10	9	41
56221	Flue gas desulfurization	42	38	44	39	163	36	29	41	32	138
4246	Distributors	61	62	62	65	250	70	59	65	62	256
	Other	116	86	89	115	406	101	97	105	103	406
	Total domestic consumption <sup>4</sup>	1,170	1,170	1,140	1,160	4,640	1,140	1,160	1,110	1,050	4,460
	Exports <sup>5</sup>	1,620	1,550	1,610	1,620	6,410	1,590	1,530	1,640	1,680	6,440
	Canada	49	44	44	44	181	45	40	39	45	169
	Total industry sales <sup>6</sup>	2,790	2,720	2,760	2,780	11,000	2,730	2,690	2,760	2,720	10,900
	Total sales from plants	2,840	2,530	2,740	2,870	11,000	2,680	2,510	2,750	2,720	10,700
	Total production	2,820	2,690	2,740	3,010	11,300	2,580	2,830	2,690	2,760	10,900

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>North American Industry Classification System.

<sup>3</sup>Includes soda ash equivalent from soda liquors and purge liquors sold to power plants for water treatment. Sales of mine water are excluded.

<sup>4</sup>Imports reported by the producer/importer have been distributed into appropriate end-use categories listed above.

<sup>5</sup>As reported by producers; includes Canada. Data may not necessarily agree with those reported by the U.S. Census Bureau for the same periods.

<sup>6</sup>Represents soda ash from domestic origin (production and inventory changes) and imports and exports. Includes soda ash sold by coproducers and distributed by purchasers into appropriate end-use categories.