

Mineral Industry Surveys

For information, contact:

Lori E. Apodaca, Sulfur Commodity Specialist
National Minerals Information Center
Telephone: (703) 648-7724
Email: lapodaca@usgs.gov

Mana Saedi (Data)
Telephone: (703) 648-7971
Email: msaedi@usgs.gov

Internet: <https://www.usgs.gov/centers/national-minerals-information-center/mineral-industry-surveys>

SULFUR IN APRIL 2023

During April 2023, production of recovered elemental sulfur was 648,000 metric tons (t), which was 5% lower than that in March 2023 and essentially unchanged from that in April 2022. Total production for January through April was 2.62 million metric tons (Mt), which was slightly higher than that in the same period of 2022. Shipments in April 2023 were 640,000 t, which was 7% lower than that in March 2023 and slightly lower than that in April 2022. Total shipments for January through April were 2.64 Mt, which were 3% higher than those in the same period of 2022. Producers' ending stocks for April 2023 were 112,000 t (table 1).

Imports of recovered sulfur in April 2023 were estimated to be 92,000 t; exports were 155,000 t. Total imports of recovered sulfur for January through April were estimated to be 437,000 t, which were 38% lower than those in the same period of 2022. Total exports of recovered sulfur for January through April were 692,000 t, which were 43% higher than those in the same period of 2022 (tables 2, 4).

Imports of sulfuric acid in April 2023 were 269,000 t; exports were 10,000 t. Total imports for January through April were

1.02 Mt, which were 12% lower than those in the same period of 2022. Total exports of sulfuric acid for January through April were 263,000 t, which were about 3.3 times greater than those in the same period of 2022 (tables 3, 4).

U.S. sulfur consumption, calculated as shipments minus exports plus imports, was estimated to be 577,000 t in April 2023. This was 6% lower than the revised amount in March 2023 and 8% lower than that in April 2022. Total consumption for January through April was estimated to be 2.38 Mt, which was 15% lower than that in the same period of 2022 (table 5).

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TABLE 1
SALIENT SULFUR STATISTICS¹

(Thousand metric tons)

Period	Production			Shipments, all sources	Stocks, end of period ²
	Petroleum ³	Natural gas	Total		
2022:					
January–December	7,500	504	8,000	7,990	125
January–April	2,400	165 ^r	2,570	2,570 ^r	116
April	613	40	653	652	116
May	636	33	670	665	121
June	640	34	674	682	112
July	651	47	697	688	122
August	651	48	699	707	114
September	623	43	666	661	119
October	629	45	673	671	121
November	649 ^r	45	695 ^r	690 ^r	125 ^r
December	614 ^r	43	657 ^r	657 ^r	125
2023:					
January	620 ^r	45	664 ^r	673 ^r	116 ^r
February	586 ^r	42	628 ^r	630 ^r	114
March	636	45	681	691	103 ^r
April ^p	616	33	648	640	112
January–April	2,460	164	2,620	2,620	112

^pPreliminary. ^rRevised.

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

²Subject to inventory adjustments.

³Includes a small quantity from coking operations.

TABLE 2
U.S. IMPORTS OF SULFUR¹

(Thousand metric tons and thousand dollars)

Period	Canada		Total, all countries ²	
	Quantity	Value ³	Quantity	Value ³
2022:				
January–December	1,490	283,000	1,670	338,000
January–April	540 ^r	90,200	705 ^r	138,000
April	146	23,300	147	24,400
May	141	32,800	141	33,800
June	144	37,300	146	38,500
July	145	43,900	146	44,800
August	151	35,800	152	36,500
September	85	11,200	86	12,100
October	85	12,100	87	13,000 ^r
November	98	9,360	98	10,000
December	106	10,400	106	11,300
2023:				
January	100 ^e	9,850	101 ^e	10,600
February	90 ^e	10,900	144 ^e	20,800
March	100 ^e	10,300	101 ^e	11,300
April	90 ^e	16,400	92 ^e	18,000
January–April	380 ^e	47,400	437 ^e	60,800

^eEstimated. ^rRevised.

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

²May include other countries not listed.

³Declared customs valuation.

Sources: U.S. Census Bureau as adjusted by U.S. Geological Survey and Acuity Commodities.

TABLE 3
U.S. IMPORTS OF SULFURIC ACID¹

(Thousand metric tons and thousand dollars)

Period	Canada			Mexico			Total, all countries ²		
	Quantity	Sulfur content	Value ³	Quantity	Sulfur content	Value ³	Quantity	Sulfur content	Value ³
2022:									
January–December	1,820	594	173,000	720	235	140,000	3,230	1,060	469,000
January–April	601	196	39,400 ^r	277	91	54,800	1,150	377	154,000
April	153	50	13,300	67	22	13,600	360	118	54,700
May	163	53	14,500	55	18	11,800	249	81	36,400
June	153	50	14,500	69	23	14,200	254	83	39,600
July	154	50	17,400	66	22	14,400	266	87	45,700
August	167	55	19,400	53	17	10,100	300	98	45,600 ^r
September	149	49	17,200	44	14	7,770	269	88	41,500
October	149	49	18,100	45	15	7,580	223	73	33,400
November	146 ^r	48 ^r	17,000 ^r	37	12	7,050	217 ^r	71 ^r	30,400 ^r
December	136 ^r	44 ^r	15,800 ^r	74	24	12,600	298 ^r	97 ^r	41,700 ^r
2023:									
January	147	48	23,200	59	19	9,950	273	89	45,100
February	157	51	26,800	47	15	7,310	237	77	36,700
March	144	47	24,800	70	23	8,340	236	77	36,100
April	146	48	18,000	51	17	6,380	269	88	33,700
January–April	594	194	92,900	227	74	32,000	1,010	332	152,000

^rRevised.

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

²May include other countries not listed.

³Declared customs valuation.

Source: U.S. Census Bureau.

TABLE 4
U.S. EXPORTS OF SULFUR AND SULFURIC ACID¹

(Thousand metric tons and thousand dollars)

Period	Sulfur		Sulfuric acid		
	Quantity	Value ²	Quantity	Sulfur content	Value ²
2022:					
January–December	1,740	479,000 ^r	609 ^r	199	36,800 ^r
January–April	484 ^r	148,000 ^r	80	26	10,200
April	170	67,900	36	12	5,210 ^r
May	113	43,500	29	9	3,840
June	132	63,800	16	5	2,200 ^r
July	193	87,500	21	7	2,930 ^r
August	169 ^r	42,000 ^r	18 ^r	6	2,790 ^r
September	134 ^r	20,700 ^r	68	22	2,800 ^r
October	219 ^r	37,000 ^r	54	18	4,130 ^r
November	156 ^r	18,400 ^r	51	17	3,550 ^r
December	139 ^r	17,600	272	89	4,300 ^r
2023:					
January	176	23,100	222	73	3,650
February	185	27,300	13	4	3,620
March	177	30,900	19	6	2,920
April	155	21,500	10	3	2,210
January–April	692	103,000	263	86	12,400

^rRevised.

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

²Declared f.a.s. (free alongside ship) valuation.

Source: U.S. Census Bureau.

TABLE 5
U.S. CONSUMPTION OF SULFUR¹

(Thousand metric tons)

Period	Domestic sources ²	Imports	Consumption
2022:			
January–December	6,250	1,670	7,920
January–April	2,090 ^r	705 ^r	2,790 ^r
April	481	147	628
May	552	141	694
June	550	146	695
July	495	146	640
August	538 ^r	152	689 ^r
September	527 ^r	86	613 ^r
October	453 ^r	87	540 ^r
November	534 ^r	98	632 ^r
December	518 ^r	106	624 ^r
2023:			
January	498	101 ^e	599 ^e
February	445 ^r	144 ^e	589 ^{r,e}
March	515 ^r	101 ^e	616 ^{r,e}
April ^p	485	92 ^e	577 ^e
January–April	1,940	437 ^e	2,380 ^e

^eEstimated. ^pPreliminary. ^rRevised.

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

²Calculated as shipments minus exports.

TABLE 6
RECOVERED SULFUR PRODUCED AND SHIPPED IN THE UNITED STATES,
BY PAD (PETROLEUM ADMINISTRATION FOR DEFENSE) DISTRICT¹

(Thousand metric tons)

District and source	January–April 2022 ²		March 2023		April 2023 ^p		January–April 2023 ^{p, 2}	
	Production	Shipments	Production	Shipments	Production	Shipments	Production	Shipments
PAD 1:								
Petroleum and coke	57	58	13	13	6	8	47	49
Natural gas	4	4	1	1	1	1	4	4
Total	61	63	14	14	7	9	51	53
PAD 2:								
Petroleum and coke	468	470	117	120	115	111	462	461
Natural gas	--	--	--	--	--	--	--	--
Total	468	470	117	120	115	111	462	461
PAD 3:								
Petroleum and coke	1,420	1,410	391	397	385	382	1,510	1,520
Natural gas	19	19	7	7	6	7	28	29
Total	1,440	1,430	399	404	392	389	1,530	1,550
PAD 4 and 5:								
Petroleum and coke	456	459 ^r	114	117	109	107	442	445
Natural gas	142	141	36	37	25	23	131	128
Total	598 ^r	600 ^r	150	154	134	131	573	573
Grand total	2,570	2,570 ^r	680 ^r	691	648	640	2,620	2,620

^pPreliminary. ^rRevised. -- Zero.

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

²May include revisions to previously published data.

TABLE 7
COMPARATIVE SULFUR AND SULFURIC ACID STATISTICS¹

(Million metric tons per year [annualized basis] and dollars per metric ton for period shown)

	2023			
	2022	March	April	January– April
Production	8.00	8.02	7.89 ^P	7.97
Shipments	7.99	8.14 ^r	7.79 ^P	8.01
Exports of sulfur	1.74	2.08	1.88	2.10
Imports of sulfur:				
Canada	1.49	1.18	1.10	1.16
Total ²	1.67	1.19	1.12	1.33
Exports of H ₂ SO ₄	0.61	0.22	0.12	0.80
Imports of H ₂ SO ₄ :				
Canada	1.82	1.70	1.78	1.81
Mexico	0.72	0.82	0.62	0.69
Total ²	3.23	2.77	3.27	3.09
Consumption:				
Domestic sources	6.25	6.06	5.90	5.91
Imports	1.67	1.19	1.12	1.33
Total	7.91 ^r	7.25	7.02	7.24
Sulfur export values ³	275 ^r	175	139	149
Sulfur import values: ³				
Canada	190	103	182	125
Average ³	203	112 ^r	196	139
H ₂ SO ₄ export values ³	60	156	218	47
H ₂ SO ₄ import values: ³				
Canada	95	172	124	156
Mexico	194	120	126	141
Average ²	145	153	125	159

^PPreliminary. ^rRevised.

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

²Includes other countries not listed.

³Average value per ton.