

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 SEPTEMBER 2023

During September 2023, production of recovered elemental sulfur was 651,000 metric tons (t), which was essentially unchanged from that in August 2023 and slightly lower than that in September 2022. Total production for January through September was 6.00 million metric tons (Mt), which was unchanged from that in the same period of 2022. Shipments in September 2023 were 652,000 t, which was slightly lower than that in August 2023 and essentially unchanged from that in September 2022. Total shipments for January through September were 6.02 Mt, which were essentially unchanged from the revised amount in the same period of 2022. Producers' ending stocks for September 2023 were 98,000 t (table 1).

Imports of recovered sulfur in September 2023 were 112,000 t; exports were 125,000 t. Total imports of recovered sulfur for January through September were 1.10 Mt, which were 20% lower than those in the same period of 2022. Total exports of recovered sulfur for January through September were 1.37 Mt, which were 12% higher than those in the same period of 2022 (tables 2, 4).

Imports of sulfuric acid in September 2023 were 288,000 t; exports were 29,000 t. Total imports for January through

September were 2.52 Mt, which were essentially unchanged from those in the same period of 2022. Total exports of sulfuric acid for January through September were 159,000 t, which were 32% lower than that in the same period of 2022 (tables 3, 4).

U.S. sulfur consumption, calculated as shipments minus exports plus imports, was 639,000 t in September 2023. This was 23% higher than the revised amount in August 2023 and 4% higher than that in September 2022. Total consumption for January through September was 5.75 Mt, which was 6% lower than the revised amount in the same period of 2022 (table 5).

List services and web feed subscribers are the first to receive notification of USGS minerals information publications and data releases. For information on how to subscribe, go to <https://www.usgs.gov/centers/national-minerals-information-center/minerals-information-publication-list-services>.

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	7,490 ^r	516 ^r	8,010 ^r	7,990 ^r	125 ^r
January–September	5,600 ^r	383 ^r	5,980	5,980 ^r	119 ^r
September	623	43	666	661	119
October	629	45	673	671	121
November	649	45	695	690 ^r	125
December	614 ^r	43	657 ^r	657 ^r	125 ^r
2023:					
January	620	45	664	673	116
February	586	42	628	630	114
March	636	45	680	691	103
April	616	33	648	640	111
May	655	36	691	700	103
June	644	32	676	676	103
July	664	36	700	698	105
August	637	20	657	663	99
September ^p	628	23	651	652	98
January–September	5,690	311	6,000	6,020	98

^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–September	1,210 ^r	251,000	1,370 ^r	304,000
September	85	11,200	86	12,100
October	85	12,100	87	13,000
November	98	9,360	98	10,000
December	106	10,400	106	11,300
2023:				
January	101	9,850	103	10,600
February	117	10,900	171	20,800
March	117	10,300	119	11,300
April	90 ^r	16,400	91 ^r	18,000
May	78 ^r	9,660	79 ^r	11,200
June	117 ^r	7,800	118 ^r	8,830
July	123 ^r	8,900	177 ^r	14,900
August	125 ^r	6,770	127 ^r	8,060
September	111	6,310	112	7,370
January–September	981	86,800	1,100	111,000

^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.

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–September	1,390	453	122,000	564	184	113,000	2,490	815	363,000
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	48	17,000	37	12	7,050	217	71	30,400
December	136	44	15,800	74	24	12,600	298	97	41,700
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
May	154	50	21,400	24	8	3,240	265	87	29,100
June	176	58	22,100	57	19	7,380	308	101	35,200
July	157	51	20,300	62	20	8,030	318	104	37,100
August	164	54	20,200	53	17	7,510	322	105	34,700
September	151	49	19,100	57	19	7,990	288	94	35,200
January–September	1,400	456	196,000	480	157	66,100	2,520	823	323,000

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.

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	377	123	36,800
January–September	1,230 ^r	406,000 ^r	232 ^r	76	24,800 ^r
September	134	20,700	68	22	2,800
October	219	37,000	54	18	4,130
November	156	18,400	51	17	3,550
December	139	17,600	39	13	4,300
2023:					
January	176	23,100	32	10	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
May	55	7,120	17	5	4,350
June	83	8,630	16	5	4,550
July	146	17,600	12	4	1,880
August	271	36,600	13	4	2,210
September	125	8,990	29	9	6,490
January–September	1,370	182,000	159	52	31,900

^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.

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

TABLE 5
U.S. CONSUMPTION OF SULFUR¹

(Thousand metric tons)

Period	Domestic sources ²	Imports	Consumption
2022:			
January–December	6,250 ^r	1,670	7,920 ^r
January–September	4,750 ^r	1,370 ^r	6,120 ^r
September	527	86	613
October	453	87	540
November	534 ^r	98	632 ^r
December	518 ^r	106	624 ^r
2023:			
January	498	103	600
February	445	171	616
March	515	119	633
April	485	91 ^r	576 ^r
May	645	79 ^r	724 ^r
June	594	118 ^r	712 ^r
July	551	177 ^r	728 ^r
August	392	127 ^r	519 ^r
September ^p	528	112	639
January–September	4,650	1,100	5,750

^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–September 2022 ²		August 2023		September 2023 ^p		January–September 2023 ^{p, 2}	
	Production	Shipments	Production	Shipments	Production	Shipments	Production	Shipments
PAD 1:								
Petroleum and coke	143	143	14	14	16	15	116	118
Natural gas	10	10	1	1	1	1	10	10
Total	153	153	15	15	17	17	126	128
PAD 2:								
Petroleum and coke	1,040	1,050	111 ^r	110	115	115	1,030	1,030
Natural gas	--	--	--	--	--	--	--	--
Total	1,040	1,050	111 ^r	110	115	115	1,030	1,030
PAD 3:								
Petroleum and coke	3,390	3,380	395	395	381	388	3,520	3,540
Natural gas	69	66	5	5	6	6	52	52
Total	3,460	3,450	400	401	387	394	3,570	3,590
PAD 4 and 5:								
Petroleum and coke	1,020	1,020	117	121	116	114	1,020	1,020
Natural gas	303	307	14	16	16	13	249	251
Total	1,320	1,330	131	137	132	127	1,270	1,280
Grand total	5,980	5,980	657	663	651	652	6,000	6,020

^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	August	September	January– September
Production	8.01 ^r	7.74	7.92 ^p	8.02
Shipments	7.99 ^r	7.81	7.94 ^p	8.05
Exports of sulfur	1.74	3.19	1.52	1.83
Imports of sulfur:				
Canada	1.49	1.48 ^r	1.35	1.31
Total ²	1.67	1.50 ^r	1.36	1.47
Exports of H ₂ SO ₄	0.38	0.15	0.35	0.21
Imports of H ₂ SO ₄ :				
Canada	1.82	1.93	1.84	1.87
Mexico	0.72	0.63	0.69	0.64
Total ²	3.23	3.80	3.50	3.36
Consumption:				
Domestic sources	6.25 ^r	4.62	6.42	6.22
Imports	1.67	1.50 ^r	1.36	1.47
Total	7.92 ^r	6.11 ^r	7.77	7.68
Sulfur export values ³	275	135	72	133
Sulfur import values: ³				
Canada	190	54 ^r	57	88
Average ³	203 ^r	63 ^r	66	101
H ₂ SO ₄ export values ³	98	174	228	201
H ₂ SO ₄ import values: ³				
Canada	95	124 ^r	127	140
Mexico	195 ^r	141	141	138
Average ²	145	108	122	128

^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.