

Mineral Industry Surveys

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SULFUR IN AUGUST 2023

During August 2023, production of recovered elemental sulfur was 657,000 metric tons (t), which was 6% lower than that in July 2023 and 6% lower than that in August 2022. Total production for January through August was 5.35 million metric tons (Mt), which was essentially unchanged from that in the same period of 2022. Shipments in August 2023 were 663,000 t, which was 5% lower than that in July 2023 and 6% lower than that in August 2022. Total shipments for January through August were 5.37 Mt, which were unchanged from those in the same period of 2022. Producers' ending stocks for August 2023 were 99,000 t (table 1).

Imports of recovered sulfur in August 2023 were estimated to be 121,000 t; exports were 271,000 t. Total imports of recovered sulfur for January through August were estimated to be 1.03 Mt, which were 20% lower than those in the same period of 2022. Total exports of recovered sulfur for January through August were 1.25 Mt, which were 14% higher than those in the same period of 2022 (tables 2, 4).

Imports of sulfuric acid in August 2023 were 322,000 t; exports were 13,000 t. Total imports for January through August

were 2.23 Mt, which were unchanged from those in the same period of 2022. Total exports of sulfuric acid for January through August were 130,000 t, which were 21% lower than that in the same period of 2022 (tables 3, 4).

U.S. sulfur consumption, calculated as shipments minus exports plus imports, was estimated to be 514,000 t in August 2023. This was 29% lower than that in July 2023 and 26% lower than that in August 2022. Total consumption for January through August was estimated to be 5.16 Mt, which was 7% lower than the revised amount 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	7,550	526	8,070	8,060	126
January–August	5,030 ^r	350 ^r	5,380 ^r	5,370 ^r	114 ^r
August	652	48	699	707	114
September	623	43	666	661	119
October	629	45	673	671	121
November	649	45	695	691 ^r	125
December	617	43	661 ^r	660	126
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 ^r	691 ^r	700 ^r	103 ^r
June	644	32 ^r	676 ^r	676 ^r	103 ^r
July	664	36	700	698	105
August ^p	637	20	657	663	99
January–August	5,060	288	5,350	5,370	99

^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–August	1,120	240,000	1,290	291,000
August	151	35,800	152	36,500
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	110 ^e	16,400	112 ^e	18,000
May	120 ^e	9,660	121 ^e	11,200
June	110 ^e	7,800	111 ^e	8,830
July	120 ^e	8,900	173 ^e	14,900
August	120 ^e	6,770	121 ^e	8,060
January–August	916 ^e	80,500	1,030 ^e	104,000

^eEstimated.

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–August	1,240	405	105,000	521	170	105,000	2,220	727	322,000 ^r
August	167	55	19,400	53	17	10,100	300	98	45,600
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
January–August	1,240	407	177,000	423	138	58,100	2,230	728	288,000

^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.

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–August	1,090 [†]	385,000 [†]	164 [†]	54 [†]	22,000
August	169	42,000	18	6	2,790
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
January–August	1,250	173,000	130	43	25,400

[†]Revised.

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	6,320 ^r	1,670	7,990
January–August	4,280 ^r	1,290	5,570 ^r
August	538	152	689
September	527	86	613
October	453	87	540
November	535 ^r	98	633 ^r
December	521	106	627
2023:			
January	498	103	600
February	445	171	616
March	515	119	633
April	485	112 ^e	597 ^e
May	645 ^r	121 ^e	767 ^{r,e}
June	594 ^r	111 ^e	705 ^{r,e}
July	551	173 ^e	725 ^e
August ^p	392	121 ^e	514 ^e
January–August	4,130	1,030 ^e	5,160 ^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–August 2022 ²		July 2023		August 2023 ^p		January–August 2023 ^{p,2}	
	Production	Shipments	Production	Shipments	Production	Shipments	Production	Shipments
PAD 1:								
Petroleum and coke	125	127	15	15	14	14	100	102
Natural gas	9	9	1	1	1	1	9	9
Total	134	135	16	16	15	15	109	111
PAD 2:								
Petroleum and coke	928	930	114	114	110	110	911	913
Natural gas	--	--	--	--	--	--	--	--
Total	928	930	114	114	110	110	911	913
PAD 3:								
Petroleum and coke	3,060	3,060	418	417	395	395	3,140	3,150
Natural gas	64	61	5	5	5	5	46	46
Total	3,130	3,120	423	422	400	401	3,190	3,200
PAD 4 and 5:								
Petroleum and coke	909	913	117	115	117	121	905	910
Natural gas	277	277	29	30	14	16	233	238
Total	1,190	1,190	146	145	131	137	1,140	1,150
Grand total	5,380	5,370	700	698	657	663	5,350	5,370

^pPreliminary. -- 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	July	August	January– August
Production	8.07	8.24	7.74 ^P	8.03
Shipments	8.06	8.21 ^r	7.81 ^P	8.07
Exports of sulfur	1.74	1.72	3.19	1.87
Imports of sulfur:				
Canada	1.49	1.41	1.41	1.38
Total ²	1.67	2.04	1.43	1.55
Exports of H ₂ SO ₄	0.38	0.14	0.15	0.20
Imports of H ₂ SO ₄ :				
Canada	1.82	1.85	1.93	1.87
Mexico	0.72	0.73	0.63	0.64
Total ²	3.23	3.74	3.80	3.35
Consumption:				
Domestic sources	6.32	6.49	4.62	6.20
Imports	1.67	2.04	1.43	1.55
Total	7.99	8.53	6.05	7.74
Sulfur export values ³	275	121 ^r	135	138
Sulfur import values: ³				
Canada	190	74	56	88
Average ³	202	86	66	101
H ₂ SO ₄ export values ³	98	161	174	195
H ₂ SO ₄ import values: ³				
Canada	95	129	123	143
Mexico	194	130	141	137
Average ²	145	117	108	129

^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.