

# Mineral Industry Surveys

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## SULFUR IN DECEMBER 2022

During December 2022, production of recovered elemental sulfur was 659,000 metric tons (t), which was 5% lower than that in November 2022 and 8% lower than that in December 2021. Total production for January through December was 8.00 million metric tons (Mt), which was 7% higher than that in the same period of 2021. Shipments in December 2022 were 659,000 t, which were 5% lower than the revised amount in November 2022 and 9% lower than that in December 2021. Total shipments for January through December were 7.99 Mt, which were 7% higher than those in the same period of 2021. Producers' ending stocks for December 2022 were 125,000 t (table 1).

Imports of recovered sulfur for December 2022 were 106,000 t; exports were 139,000 t. Total imports of recovered sulfur for January through December were 1.67 Mt, which were 30% lower than those in the same period of 2021. Total exports of recovered sulfur for January through December were 1.74 Mt, which were 8% lower than those in the same period of 2021 (tables 2, 4).

Imports of sulfuric acid for December 2022 were 302,000 t; exports were 272,000 t. Total imports for January through

December were 3.23 Mt, which were essentially unchanged from those in the same period of 2021. Total exports of sulfuric acid for January through December were 607,000 t, which were 54% higher than those in the same period of 2021 (tables 3, 4).

U.S. sulfur consumption, calculated as shipments minus exports plus imports, was 626,000 t in December 2022. This was 5% lower than the revised amount in November 2022 and 3% lower than that in December 2021. Total consumption for January through December was 7.92 Mt, which was unchanged from the amount in the same period of 2021 (table 5).

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TABLE 1  
SALIENT SULFUR STATISTICS<sup>1</sup>

(Thousand metric tons)

Period	Production			Shipments, all sources	Stocks, end of period <sup>2</sup>
	Petroleum <sup>3</sup>	Natural gas	Total		
2021:					
January–December	6,920	550	7,470	7,460	113
December	666	47	712	724	113
2022:					
January	602	42	644	627	129
February	566	39	605	622	112
March	623	44	668	665	115
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	650	45	696	691 <sup>r</sup>	126 <sup>r</sup>
December <sup>p</sup>	616	43	659	659	125
January–December	7,500	504	8,000	7,990	125

<sup>p</sup>Preliminary. <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>Subject to inventory adjustments.

<sup>3</sup>Includes a small quantity from coking operations.

TABLE 2  
U.S. IMPORTS OF SULFUR<sup>1</sup>

(Thousand metric tons and thousand dollars)

Period	Canada		Total, all countries <sup>2</sup>	
	Quantity	Value <sup>3</sup>	Quantity	Value <sup>3</sup>
2021:				
January–December	1,680	167,000	2,370	272,000
December	111	17,600	112	18,600
2022:				
January	148	22,400	255	51,000
February	103	17,600	105	18,700
March	144	26,900	197	43,700
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	13,100
November	98	9,360	98	10,000
December	106	10,400	106	11,300
January–December	1,490	283,000	1,670	338,000

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

<sup>2</sup>May include other countries not listed.

<sup>3</sup>Declared customs valuation.

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

TABLE 3  
U.S. IMPORTS OF SULFURIC ACID<sup>1</sup>

(Thousand metric tons and thousand dollars)

Period	Canada			Mexico			Total, all countries <sup>2</sup>		
	Quantity	Sulfur content	Value <sup>3</sup>	Quantity	Sulfur content	Value <sup>3</sup>	Quantity	Sulfur content	Value <sup>3</sup>
2021:									
January–December	1,880	614	95,200	748	245	53,300	3,260	1,070	225,000
December	147	48	6,590	76	25	4,470	245	80	18,100
2022:									
January	153	50	8,410	49	16	8,390	267	87	30,600
February	127	42	7,740	56	18	10,800	199	65	23,800
March	168	55	10,100	104	34	22,100	328	107	45,200
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	45,500
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	142	46	16,600	37	12	7,050	213	70	30,000
December	140	46	16,200	74	24	12,600	302	99	42,100
January–December	1,820	594	173,000	720	235	140,000	3,230	1,060	469,000

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

<sup>2</sup>May include other countries not listed.

<sup>3</sup>Declared customs valuation.

Source: U.S. Census Bureau.

TABLE 4  
U.S. EXPORTS OF SULFUR AND SULFURIC ACID<sup>1</sup>

(Thousand metric tons and thousand dollars)

Period	Sulfur		Sulfuric acid		
	Quantity	Value <sup>2</sup>	Quantity	Sulfur content	Value <sup>2</sup>
2021:					
January–December	1,900	215,000	394	129	26,700
December	193	28,800	16	5	1,810
2022:					
January	46	7,030	11	3	997
February	199	45,700	12	4	1,360
March	68	22,000	22	7	2,660
April	170	67,900	36	12	5,200
May	113	43,500	29	9	3,840
June	132	63,800	16	5	2,230
July	193	87,500	21	7	2,920
August	136	39,600	17	6	2,760
September	166	22,900	68	22	2,710
October	244	59,600	54	18	4,140
November	132	27,100	51	17	3,540
December	139	17,600	272	89	4,290
January–December	1,740	504,000	607	199	36,600

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

<sup>2</sup>Declared f.a.s. (free alongside ship) valuation.

Source: U.S. Census Bureau.

TABLE 5  
U.S. CONSUMPTION OF SULFUR<sup>1</sup>

(Thousand metric tons)

Period	Domestic sources <sup>2</sup>	Imports	Consumption
2021:			
January–December	5,560	2,370	7,940
December	531	112	643
2022:			
January	581	255	837
February	423	105	528
March	597	197	794
April	481	147	628
May	552	141	694
June	550	146	695
July	495	146	640
August	571	152	722
September	494	86	580
October	427	87	514
November	559 <sup>r</sup>	98	657 <sup>r</sup>
December <sup>p</sup>	520	106	626
January–December	6,250	1,670	7,920

<sup>p</sup>Preliminary. <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>Calculated as shipments minus exports.

TABLE 6  
RECOVERED SULFUR PRODUCED AND SHIPPED IN THE UNITED STATES,  
BY PAD (PETROLEUM ADMINISTRATION FOR DEFENSE) DISTRICT<sup>1</sup>

(Thousand metric tons)

District and source	January–December 2021 <sup>2</sup>		November 2022		December 2022 <sup>P</sup>		January–December 2022 <sup>P</sup>	
	Production	Shipments	Production	Shipments	Production	Shipments	Production	Shipments
PAD 1:								
Petroleum and coke	176	175	18	19	15	16	194	193
Natural gas	13	13	1	1	1	1	13	13
Total	189	188	19	20	16	17	207	207
PAD 2:								
Petroleum and coke	1,320	1,320	111	111	113	111	1,380	1,380
Natural gas	--	--	--	--	--	--	--	--
Total	1,320	1,320	111	111	113	111	1,380	1,380
PAD 3:								
Petroleum and coke	4,100	4,100	403	395	368	373	4,560	4,550
Natural gas	97	97	8	7	8	8	79	79
Total	4,200	4,200	410	402	376	380	4,640	4,620
PAD 4 and 5:								
Petroleum and coke	1,320	1,320	118	117 <sup>r</sup>	119	117	1,370	1,370
Natural gas	440	436	37	40	35	33	411	414
Total	1,760	1,750	155	157 <sup>r</sup>	154	151	1,780	1,780
Grand total	7,470	7,460	696	691 <sup>r</sup>	659	659	8,000	7,990

<sup>P</sup>Preliminary. <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>May include revisions to previously published data.

TABLE 7  
COMPARATIVE SULFUR AND SULFURIC ACID STATISTICS<sup>1</sup>

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

	2021	2022		
		November	December	January– December
Production	7.47	8.46	7.76 <sup>p</sup>	8.00
Shipments	7.46	8.40 <sup>r</sup>	7.76 <sup>p</sup>	7.99
Exports of sulfur	1.90	1.61	1.64	1.74
Imports of sulfur:				
Canada	1.68	1.19	1.24	1.49
Total <sup>2</sup>	2.37	1.19	1.25	1.67
Exports of H <sub>2</sub> SO <sub>4</sub>	0.39	0.62	3.20	0.61
Imports of H <sub>2</sub> SO <sub>4</sub> :				
Canada	1.88	1.73	1.65	1.82
Mexico	0.75	0.45	0.87	0.72
Total <sup>2</sup>	3.26	2.59	3.55	3.23
Consumption:				
Domestic sources	5.56	6.80 <sup>r</sup>	6.12	6.25
Imports	2.37	1.19	1.25	1.67
Total	7.94	7.99 <sup>r</sup>	7.37	7.92
Sulfur export values <sup>3</sup>	113	206	127	290
Sulfur import values: <sup>3</sup>				
Canada	99	96	98	190
Average <sup>3</sup>	115	102	106	203
H <sub>2</sub> SO <sub>4</sub> export values <sup>3</sup>	68	70	16	60
H <sub>2</sub> SO <sub>4</sub> import values: <sup>3</sup>				
Canada	51	117	116	95
Mexico	71	191	170	195
Average <sup>2</sup>	69	141	140	145

<sup>p</sup>Preliminary. <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>Includes other countries not listed.

<sup>3</sup>Average value per ton.