



MINERAL INDUSTRY SURVEYS

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON, D. C. 20241



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Explosives, Annual

APPARENT CONSUMPTION OF INDUSTRIAL EXPLOSIVES AND BLASTING AGENTS IN THE UNITED STATES, 1978

Apparent consumption of explosives and blasting agents in the United States increased 6% to 3.9 billion pounds, according to the Bureau of Mines, U.S. Department of the Interior. Apparent consumption is measured by sales reported by manufacturers.

Water gels and slurries showed the most significant change in consumption of all classes of explosives and blasting agents in 1978, an increase of 36% over the amount used in 1977.

All principal consuming industries used greater quantities of explosives and blasting agents in 1978 than in 1977. Over 55% of the total weight was utilized in the mining of coal. Nearly all permissibles, and 62% of ammonium nitrate fuel-mixed blasting agents and unprocessed ammonium nitrate were consumed in coal mining. Other high explosives were used primarily in quarrying and nonmetal mining (33%), and construction (30%). The majority of water gels and slurries went into metal mining (54%).

Seven States collectively consumed 58% of all explosives and blasting agents used in the United States in 1978. These were, in order of consumption, Kentucky, Pennsylvania, Alabama, Ohio, Arizona, West Virginia, and Minnesota.

Prepared in the Division of Nonmetallic Minerals, August 17, 1979.

Classification of Industrial Explosives and Blasting Agents

"Apparent consumption" of explosives and blasting agents, as used in this report, means sales reported to the Institute of Makers of Explosives (IME) by IME members and provided to the Bureau of Mines on a proprietary basis, plus sales by nonmember manufacturers reported directly to the Bureau on Form 6-1439-A. Classification of explosives and blasting agents by type and use appears as reported by the manufacturers. Sales of explosives and blasting agents imported by nonmanufacturers are not included, but may be locally important. Some quantities are published in such a way as to avoid disclosing company proprietary data.

The principal distinction between explosives and blasting agents is related to their sensitivity to initiation--explosives are cap-sensitive but blasting agents are not, and therefore require a primer. Only "high" explosives are currently reported. "Low" explosives, which burn very rapidly but do not detonate, include principally black powder and propellants. Black powder has not been reported in industrial use since 1971. Both explosives and blasting agents vary widely in composition, although most blasting agents are essentially mixtures of ammonium nitrate plus a fuel.

Water gels and slurries may be either explosives or blasting agents, but for convenience are classified separately in a recognizable category.

The five product classifications used in this report are the same as those adopted by IME. These are:

1. Permissibles.--Grades of high explosives approved by brand name by the U.S. Bureau of Mines or the Mine Safety and Health Administration for use, in a prescribed manner, in underground coal mines, including water gels and slurries approved as permissibles.

2. Other High Explosives.--All high explosives except

a) permissibles and

b) any water gels or slurries that would otherwise be classified as high explosives.

Included in the "Other High Explosives" classification are all formulations packaged in metal containers.

3. Packaged and Bulk Water Gels and Slurries.--All water gels and slurries, packaged or in bulk, made by addition of more than 5% water to high explosives or blasting agents, except those approved as permissibles.

4. Ammonium Nitrate Fuel-Mixed Blasting Agents.--Without regard to packaging or container.

5. Unprocessed Ammonium Nitrate.--Prilled or grained ammonium nitrate for use in blasting agents.

Companies covered by this report, including IME members, are:

American Cyanamid Company--Princeton, New Jersey
Apache Powder Company--Benson, Arizona
Atlas Powder Company--Dallas, Texas
Austin Powder Company--Cleveland, Ohio
Columbia Nitrogen Corp.--Augusta, Georgia
E. I. du Pont de Nemours & Co., Inc.--Wilmington, Delaware
Energy Sciences & Consultants, Inc.--Biwabik, Minnesota
Goex Inc.--Cleburne, Texas
Gulf Oil Chemicals Company--Merriam, Kansas
Hawkeye Chemical Company--Clinton, Iowa
Hercules, Inc.--Wilmington, Delaware
Independent Explosives Company--Cleveland, Ohio
Ireco Chemicals--Salt Lake City, Utah
Monsanto Co.--St. Louis, Missouri
Nitrox Products Company--Charleston, West Virginia
Phillips Chemical Co.--Bartlesville, Oklahoma
Sierra Chemical Company--Reno, Nevada
Trojan Division, IMC Chemical Group, Inc.--Allentown, Pennsylvania
Union Oil Company of California--Los Angeles, California
USS Agri-Chemicals--Atlanta, Georgia

TABLE 1. - Salient statistics of industrial explosives and blasting agents sold for consumption in the United States, 1978
(Thousand pounds)

Class	1978
Permissibles <u>1</u> /-----	41,143
Other high explosives <u>1</u> /-----	179,355
Water gels and slurries-----	431,797
Ammonium nitrate fuel-mixed blasting agents-----	1,264,307
Unprocessed ammonium nitrate <u>2</u> /-----	2,012,587
Total-----	3,929,189

1/ Some quantities of this class of explosive are included with "Unprocessed ammonium nitrate" to avoid disclosing individual company data.

2/ Includes some quantities of permissible explosives and other high explosives.

TABLE 2. - Industrial explosives and blasting agents sold for consumption
in the United States by class and use, 1978
(Thousand pounds)

Class	Coal mining 1/	Metal mining 1/	Quarrying and nonmetal mining 1/	Construction work 1/	All other purposes 2/	Total
Permissibles <u>3/</u> ----	38,530	208	618	1,587	200	41,143
Other high explosives <u>3/</u> ----	27,741	25,400	59,974	53,516	12,724	179,355
Water gels and slurries-----	63,494	234,470	89,322	42,462	2,049	431,797
Ammonium nitrate fuel-mixed blasting agents--	777,082	74,267	237,611	172,442	2,905	1,264,307
Unprocessed ammonium nitrate <u>4/</u> -----	1,261,783	239,868	217,430	146,602	146,904	2,012,587
Total-----	2,168,630	574,213	604,955	416,609	164,782	3,929,189

1/ Some quantities of this use are included with "All other purposes" to avoid disclosing individual company data.

2/ Includes some quantities from coal mining, metal mining, quarrying and nonmetal mining, and construction work.

3/ Some quantities of this class of explosive are included with "Unprocessed ammonium nitrate" to avoid disclosing individual company data.

4/ Includes some quantities of permissible explosives and other high explosives.

TABLE 3. - Industrial explosives and blasting agents sold for consumption
in the United States, by State and use, 1978
(Thousand pounds)

State	Use					Total
	Coal mining	Metal mining	Quarrying and nonmetal mining	Construction work	All other purposes	
Alabama-----	235,014	237	33,349	40,603	1,306	310,509
Alaska-----	364	---	129	4,220	195	4,908
Arizona-----	24,280	175,337	2,802	7,636	2,022	212,077
Arkansas-----	9,243	1,621	9,620	2,811	41	23,336
California-----	---	21,690	14,074	12,834	64	48,662
Colorado-----	31,011	28,539	1,360	1,426	1,019	63,355
Connecticut-----	54	---	8,176	6,821	---	15,051
Delaware-----	---	---	---	---	41	41
District of Columbia <u>1/</u>	---	---	---	---	---	---
Florida-----	25	---	19,716	8,124	800	28,665
Georgia-----	265	---	22,519	7,365	26	30,175
Hawaii-----	---	---	268	952	---	1,220
Idaho-----	25	2,922	2,126	4,792	24	9,889
Illinois-----	67,593	1,572	39,128	2,736	696	111,725
Indiana-----	122,324	30	19,553	6,759	592	149,258
Iowa-----	3,369	178	27,006	3,776	5,400	39,729
Kansas-----	10,321	---	3,649	2,413	216	16,599
Kentucky-----	513,031	618	44,060	42,256	22,934	622,899
Louisiana-----	---	---	4,126	283	1,362	5,771
Maine-----	---	9	1,669	822	---	2,500
Maryland-----	6,608	---	10,550	2,419	1	19,578
Massachusetts-----	---	---	3,199	2,056	---	5,255
Michigan-----	255	34,100	21,575	3,940	13,507	73,377
Minnesota-----	5,240	133,776	3,811	7,850	16,836	167,513
Mississippi-----	---	---	2,517	223	1,285	4,025
Missouri-----	13,076	6,255	26,949	11,829	572	58,681
Montana-----	38,501	20,086	5,012	673	2,998	67,270
Nebraska-----	---	40	1,469	738	---	2,247
Nevada-----	---	22,185	4,065	265	21	26,536
New Hampshire-----	3	---	490	1,326	10	1,829
New Jersey-----	---	92	3,069	1,033	---	4,194
New Mexico-----	36,047	45,363	12,571	3,301	40	97,322
New York-----	44	1,754	9,412	6,555	28	17,793
North Carolina-----	1	245	20,920	13,712	---	34,878
North Dakota-----	814	---	187	44	852	1,897
Ohio-----	156,869	73	44,673	16,497	7,266	225,378
Oklahoma-----	34,255	2	10,876	2,428	630	48,191
Oregon-----	992	---	633	9,828	---	11,453
Pennsylvania:						
Anthracite-----	34,630	775	44,138	27,808	14,097	517,473
Bituminous-----	396,025	---	---	---	---	---
Rhode Island-----	---	---	125	303	---	428
South Carolina-----	---	---	4,865	544	---	5,409
South Dakota-----	---	231	30	---	---	261
Tennessee-----	47,798	10,925	30,480	53,156	4,506	146,865
Texas-----	---	92	26,812	20,950	2,884	50,738
Utah-----	495	38,423	16,619	2,929	682	59,148
Vermont-----	56	---	639	803	---	1,498
Virginia-----	102,416	161	28,997	23,277	---	154,851
Washington-----	165	2,766	300	13,215	30	16,476
West Virginia-----	162,499	1,193	5,201	29,111	12,607	210,611
Wisconsin-----	63	4,773	8,981	3,096	1,094	18,007
Wyoming-----	114,859	18,150	2,460	71	2,158	137,698
Undistributed-----	<u>2/</u>	<u>2/</u>	<u>2/</u>	<u>2/</u>	45,940	45,940
Total-----	2,168,630	574,213	604,955	416,609	164,782	3,929,189

1/ Included with Maryland.

2/ Quantities included in "All other purposes" to avoid disclosing individual company data.

TABLE 4. - Industrial explosives and blasting agents sold for consumption in the United States, by State and class, 1978 (Thousand pounds)

State	Class						Total
	Fixed high explosives			Blasting agents			
	Permissibles 1/	Other high explosives 1/	Water gels and slurries	Ammonium nitrate fuel-mixed blasting agents	Unprocessed ammonium nitrate 2/		
Alabama-----	3,038	2,554	11,508	96,702	196,707		310,509
Alaska-----	101	1,376	3,001	247	183		4,908
Arizona-----	---	3,146	50,887	12,283	145,761		212,077
Arkansas-----	2	1,111	3,040	6,981	12,202		23,336
California-----	---	4,363	20,039	8,795	15,465		48,662
Colorado-----	50	5,237	17,025	7,849	33,194		63,355
Connecticut-----	---	1,462	4,172	2,677	6,740		15,051
Delaware-----	3	---	38	---	---		41
District of Columbia 3/	---	---	---	---	---		---
Florida-----	---	9,935	8,611	9,119	1,000		28,665
Georgia-----	3	2,131	6,618	21,223	200		30,175
Hawaii-----	---	8	720	346	146		1,220
Idaho-----	---	1,306	2,871	450	5,262		9,889
Illinois-----	524	8,199	6,101	63,285	33,616		111,725
Indiana-----	237	2,106	8,989	110,820	27,106		149,258
Iowa-----	96	2,850	8,203	1,061	27,519		39,729
Kansas-----	---	513	1,540	13,869	677		16,599
Kentucky-----	19,637	12,188	11,719	241,980	337,375		622,899
Louisiana-----	---	1,251	914	3,606	---		5,771
Maine-----	---	1,217	636	647	---		2,500
Maryland-----	3	2,313	4,488	12,199	575		19,578
Massachusetts-----	---	1,934	800	2,438	83		5,255
Michigan-----	---	1,451	28,416	15,766	27,744		73,377
Minnesota-----	---	672	102,746	36,766	27,329		167,513
Mississippi-----	2	1,241	949	1	1,832		4,025
Missouri-----	40	11,209	6,976	15,317	25,139		58,681
Montana-----	---	4,231	907	9,506	52,626		67,270
Nebraska-----	---	556	259	1,432	---		2,247
Nevada-----	---	630	393	6,510	19,003		26,536
New Hampshire-----	---	1,280	205	344	---		1,829
New Jersey-----	---	1,614	1,047	1,533	---		4,194
New Mexico-----	11	6,485	10,394	30,031	50,401		97,322
New York-----	4	4,217	3,211	7,451	2,910		17,793
North Carolina-----	---	3,519	8,836	22,505	18		34,878
North Dakota-----	---	736	32	---	1,129		1,897
Ohio-----	1,479	6,760	7,438	81,297	128,404		225,378
Oklahoma-----	---	1,204	2,944	39,177	4,866		48,191
Oregon-----	---	3,398	1,202	3,589	3,264		11,453
Pennsylvania-----	1,134	23,192	34,402	70,083	388,662		517,473
Rhode Island-----	---	166	31	231	---		428
South Carolina-----	---	273	1,354	3,782	---		5,409
South Dakota-----	---	---	261	---	---		261
Tennessee-----	639	8,644	6,227	59,377	71,978		146,865
Texas-----	3	4,926	4,136	14,195	27,478		50,738
Utah-----	400	4,914	10,757	6,818	36,259		59,148
Vermont-----	9	583	523	383	---		1,498
Virginia-----	7,967	9,201	6,962	87,359	43,362		154,851
Washington-----	---	3,567	2,031	348	10,530		16,476
West Virginia-----	5,538	5,106	2,624	75,453	121,890		210,611
Wisconsin-----	9	1,916	6,654	3,698	5,730		18,007
Wyoming-----	214	2,464	7,960	54,778	72,282		137,698
Undistributed-----	---	---	---	---	45,940		45,940
Total-----	41,143	179,355	431,797	1,264,307	2,012,587		3,929,189

1/ Some quantities of this class of explosive are included with "Unprocessed ammonium nitrate" to avoid disclosing individual company data.

2/ Includes some quantities of permissible explosives and other high explosives.

3/ Included with Maryland.

TABLE 5. - Permissible explosives sold for consumption in the United States,
by State and use, 1978 ^{1/}
(Thousand pounds)

State	Use					Total
	Coal mining	Metal mining	Quarrying and nonmetal mining	Construction work	All other purposes	
Alabama-----	2,772	---	2	263	1	3,038
Alaska-----	101	---	---	---	---	101
Arizona-----	---	---	---	---	---	---
Arkansas-----	---	---	---	2	---	2
California-----	---	---	---	---	---	---
Colorado-----	49	---	---	1	---	50
Connecticut-----	---	---	---	---	---	---
Delaware-----	---	---	---	---	3	3
District of Columbia ^{2/}	---	---	---	---	---	---
Florida-----	---	---	---	---	---	---
Georgia-----	3	---	---	---	---	3
Hawaii-----	---	---	---	---	---	---
Idaho-----	---	---	---	---	---	---
Illinois-----	370	---	154	---	---	524
Indiana-----	201	---	36	---	---	237
Iowa-----	96	---	---	---	---	96
Kansas-----	---	---	---	---	---	---
Kentucky-----	19,498	---	7	132	---	19,637
Louisiana-----	---	---	---	---	---	---
Maine-----	---	---	---	---	---	---
Maryland-----	3	---	---	---	---	3
Massachusetts-----	---	---	---	---	---	---
Michigan-----	---	---	---	---	---	---
Minnesota-----	---	---	---	---	---	---
Mississippi-----	---	---	---	---	2	2
Missouri-----	35	---	1	4	---	40
Montana-----	---	---	---	---	---	---
Nebraska-----	---	---	---	---	---	---
Nevada-----	---	---	---	---	---	---
New Hampshire-----	---	---	---	---	---	---
New Jersey-----	---	---	---	---	---	---
New Mexico-----	9	---	---	2	---	11
New York-----	4	---	---	---	---	4
North Carolina-----	---	---	---	---	---	---
North Dakota-----	---	---	---	---	---	---
Ohio-----	1,123	---	348	8	---	1,479
Oklahoma-----	---	---	---	---	---	---
Oregon-----	---	---	---	---	---	---
Pennsylvania:						
Anthracite-----	27	---	63	173	9	1,134
Bituminous-----	862	---	---	---	---	---
Rhode Island-----	---	---	---	---	---	---
South Carolina-----	---	---	---	---	---	---
South Dakota-----	---	---	---	---	---	---
Tennessee-----	457	11	---	171	---	639
Texas-----	---	---	---	3	---	3
Utah-----	190	193	---	1	16	400
Vermont-----	9	---	---	---	---	9
Virginia-----	7,957	---	---	10	---	7,967
Washington-----	---	---	---	---	---	---
West Virginia-----	4,716	4	---	815	3	5,538
Wisconsin-----	---	---	7	2	---	9
Wyoming-----	48	---	---	---	166	214
Total-----	38,530	208	618	1,587	200	41,143

^{1/} Some quantities of permissible explosives are included with "Unprocessed ammonium nitrate" to avoid disclosing individual company data.

^{2/} Included with Maryland.

TABLE 6. - Other high explosives sold for consumption in the United States, by State and use, 1978 ^{1/}
(Thousand pounds)

State	Use					Total
	Coal mining	Metal mining	Quarrying and nonmetal mining	Construction work	All other purposes	
Alabama-----	688	---	421	867	578	2,554
Alaska-----	---	---	---	1,182	194	1,376
Arizona-----	---	2,881	20	231	14	3,146
Arkansas-----	26	10	409	665	1	1,111
California-----	---	246	357	3,735	25	4,363
Colorado-----	72	4,939	46	37	143	5,237
Connecticut-----	15	---	429	1,018	---	1,462
Delaware-----	---	---	---	---	---	---
District of Columbia ^{2/}	---	---	---	---	---	---
Florida-----	25	---	5,498	4,412	---	9,935
Georgia-----	18	---	1,405	708	---	2,131
Hawaii-----	---	---	8	---	---	8
Idaho-----	---	615	67	624	---	1,306
Illinois-----	487	---	6,565	1,147	---	8,199
Indiana-----	80	---	1,753	273	---	2,106
Iowa-----	7	---	2,063	780	---	2,850
Kansas-----	---	---	224	76	213	513
Kentucky-----	6,426	---	4,096	1,666	---	12,188
Louisiana-----	---	---	314	5	932	1,251
Maine-----	---	---	619	598	---	1,217
Maryland-----	445	---	1,640	228	---	2,313
Massachusetts-----	---	---	835	1,099	---	1,934
Michigan-----	---	346	884	179	42	1,451
Minnesota-----	---	231	30	411	---	672
Mississippi-----	---	---	81	49	1,111	1,241
Missouri-----	325	4,380	3,870	2,062	572	11,209
Montana-----	62	816	---	395	2,958	4,231
Nebraska-----	---	---	162	394	---	556
Nevada-----	---	586	---	44	---	630
New Hampshire-----	3	---	142	1,135	---	1,280
New Jersey-----	---	4	1,429	181	---	1,614
New Mexico-----	48	5,240	347	850	---	6,485
New York-----	---	623	1,754	1,840	---	4,217
North Carolina-----	---	---	1,149	2,370	---	3,519
North Dakota-----	54	---	---	12	670	736
Ohio-----	1,174	---	4,572	1,014	---	6,760
Oklahoma-----	19	---	241	413	531	1,204
Oregon-----	---	---	140	3,258	---	3,398
Pennsylvania:						
Anthracite-----	2,673	40	7,244	4,779	20	23,192
Bituminous-----	8,436	---	---	---	---	---
Rhode Island-----	---	---	32	134	---	166
South Carolina-----	---	---	45	228	---	273
South Dakota-----	---	---	---	---	---	---
Tennessee-----	746	967	3,292	3,614	25	8,644
Texas-----	---	1	439	1,962	2,524	4,926
Utah-----	19	2,958	10	1,270	657	4,914
Vermont-----	26	---	198	359	---	583
Virginia-----	2,060	59	5,368	1,714	---	9,201
Washington-----	159	164	70	3,174	---	3,567
West Virginia-----	3,186	3	332	1,585	---	5,106
Wisconsin-----	63	---	1,183	670	---	1,916
Wyoming-----	399	291	191	69	1,514	2,464
Total-----	27,741	25,400	59,974	53,516	12,724	179,355

^{1/} Some quantities of other high explosives are included with "Unprocessed ammonium nitrate" to avoid disclosing individual company data.

^{2/} Included with Maryland.

TABLE 7. - Packaged and bulk water gels and slurries sold for consumption in the United States, by State and use, 1978
(Thousand pounds)

State	Use					Total
	Coal mining	Metal mining	Quarrying and nonmetal mining	Construction work	All other purposes	
Alabama-----	9,115	---	1,060	1,311	22	11,508
Alaska-----	68	---	125	2,808	---	3,001
Arizona-----	---	50,663	19	205	---	50,887
Arkansas-----	66	67	2,153	754	---	3,040
California-----	---	13,010	1,684	5,335	10	20,039
Colorado-----	1,473	14,938	303	191	120	17,025
Connecticut-----	1	---	1,199	2,972	---	4,172
Delaware-----	---	---	---	---	38	38
District of Columbia ^{1/}	---	---	---	---	---	---
Florida-----	---	---	5,672	2,939	---	8,611
Georgia-----	46	---	5,453	1,110	9	6,618
Hawaii-----	---	---	260	460	---	720
Idaho-----	25	1,135	955	755	1	2,871
Illinois-----	1,403	---	4,287	411	---	6,101
Indiana-----	5,175	---	3,564	246	4	8,989
Iowa-----	169	---	7,678	356	---	8,203
Kansas-----	821	---	685	34	---	1,540
Kentucky-----	10,187	---	889	643	---	11,719
Louisiana-----	---	---	212	272	430	914
Maine-----	---	9	529	98	---	636
Maryland-----	194	---	3,550	744	---	4,488
Massachusetts-----	---	---	624	176	---	800
Michigan-----	---	27,290	1,085	6	35	28,416
Minnesota-----	---	99,821	2,172	747	6	102,746
Mississippi-----	---	---	636	174	139	949
Missouri-----	1,094	314	3,972	1,596	---	6,976
Montana-----	400	217	10	240	40	907
Nebraska-----	---	40	207	12	---	259
Nevada-----	---	317	---	76	---	393
New Hampshire-----	---	---	197	8	---	205
New Jersey-----	---	43	712	292	---	1,047
New Mexico-----	1,356	8,600	151	247	40	10,394
New York-----	---	536	1,420	1,255	---	3,211
North Carolina-----	---	---	5,445	3,391	---	8,836
North Dakota-----	---	---	---	32	---	32
Ohio-----	762	---	5,173	1,503	---	7,438
Oklahoma-----	1,203	2	1,342	397	---	2,944
Oregon-----	---	---	77	1,125	---	1,202
Pennsylvania:						
Anthracite-----	977	---	11,423	1,369	268	34,402
Bituminous-----	20,365	---	---	---	---	---
Rhode Island-----	---	---	29	2	---	31
South Carolina-----	---	---	1,337	17	---	1,354
South Dakota-----	---	231	30	---	---	261
Tennessee-----	567	1,557	2,307	1,784	12	6,227
Texas-----	---	---	2,833	943	360	4,136
Utah-----	84	9,186	---	1,480	7	10,757
Vermont-----	4	---	319	200	---	523
Virginia-----	1,187	---	5,364	411	---	6,962
Washington-----	6	70	230	1,695	30	2,031
West Virginia-----	1,146	---	329	1,149	---	2,624
Wisconsin-----	---	4,765	1,400	489	---	6,654
Wyoming-----	5,600	1,659	221	2	478	7,960
Total-----	63,494	234,470	89,322	42,462	2,049	431,797

^{1/} Included with Maryland.

TABLE 8. - Ammonium nitrate fuel-mixed blasting agents sold for consumption in the United States, by State and use, 1978
(Thousand pounds)

State	Use					Total
	Coal mining	Metal mining	Quarrying and nonmetal mining	Construction work	All other purposes	
Alabama-----	68,249	237	19,550	7,962	704	96,702
Alaska-----	12	---	4	230	1	247
Arizona-----	280	6,329	1,363	4,135	176	12,283
Arkansas-----	2,571	38	3,273	1,059	40	6,981
California-----	---	6,762	646	1,377	10	8,795
Colorado-----	7,548	---	198	103	---	7,849
Connecticut-----	38	---	903	1,736	---	2,677
Delaware-----	---	---	---	---	---	---
District of Columbia <u>1/</u>	---	---	---	---	---	---
Florida-----	---	---	7,546	773	800	9,119
Georgia-----	---	---	15,659	5,547	17	21,223
Hawaii-----	---	---	---	346	---	346
Idaho-----	---	132	271	25	22	450
Illinois-----	51,585	41	10,481	1,178	---	63,285
Indiana-----	90,350	30	14,200	6,240	---	110,820
Iowa-----	3	---	619	439	---	1,061
Kansas-----	9,500	---	2,063	2,303	3	13,869
Kentucky-----	185,461	305	17,388	38,174	652	241,980
Louisiana-----	---	---	3,600	6	---	3,606
Maine-----	---	---	521	126	---	647
Maryland-----	5,517	---	5,238	1,443	1	12,199
Massachusetts-----	---	---	1,657	781	---	2,438
Michigan-----	255	3,581	11,831	99	---	15,766
Minnesota-----	5,240	31,450	34	42	---	36,766
Mississippi-----	---	---	---	---	1	1
Missouri-----	6,587	989	5,114	2,627	---	15,317
Montana-----	9,413	53	2	38	---	9,506
Nebraska-----	---	---	1,100	332	---	1,432
Nevada-----	---	2,452	4,050	8	---	6,510
New Hampshire-----	---	---	151	183	10	344
New Jersey-----	---	45	928	560	---	1,533
New Mexico-----	11,500	9,508	8,190	833	---	30,031
New York-----	40	216	4,529	2,638	28	7,451
North Carolina-----	1	245	14,323	7,936	---	22,505
North Dakota-----	---	---	---	---	---	---
Ohio-----	55,736	---	13,553	12,008	---	81,297
Oklahoma-----	33,033	---	4,581	1,464	99	39,177
Oregon-----	992	---	30	2,567	---	3,589
Pennsylvania:						
Anthracite-----	900	---	9,359	12,157	335	70,083
Bituminous-----	47,332	---	---	---	---	---
Rhode Island-----	---	---	64	167	---	231
South Carolina-----	---	---	3,483	299	---	3,782
South Dakota-----	---	---	---	---	---	---
Tennessee-----	34,291	71	9,769	15,242	4	59,377
Texas-----	---	91	11,446	2,658	---	14,195
Utah-----	---	229	6,409	178	2	6,818
Vermont-----	17	---	122	244	---	383
Virginia-----	50,811	102	16,920	19,526	---	87,359
Washington-----	---	---	---	348	---	348
West Virginia-----	56,440	---	3,543	15,470	---	75,453
Wisconsin-----	---	8	2,855	835	---	3,698
Wyoming-----	43,380	11,353	45	---	---	54,778
Total-----	777,082	74,267	237,611	172,442	2,905	1,264,307

1/ Included with Maryland.

TABLE 9. - Unprocessed ammonium nitrate sold for consumption
in the United States, by State and use, 1978 ^{1/}
(Thousand pounds)

State	Use					Total
	Coal mining	Metal mining	Quarrying and nonmetal mining	Construction work	All other purposes	
Alabama-----	154,190	---	12,316	30,200	1	196,707
Alaska-----	183	---	---	---	---	183
Arizona-----	24,000	115,464	1,400	3,065	1,832	145,761
Arkansas-----	6,580	1,506	3,785	331	---	12,202
California-----	---	1,672	11,387	2,387	19	15,465
Colorado-----	21,869	8,662	813	1,094	756	33,194
Connecticut-----	---	---	5,645	1,095	---	6,740
Delaware-----	---	---	---	---	---	---
District of Columbia ^{2/}	---	---	---	---	---	---
Florida-----	---	---	1,000	---	---	1,000
Georgia-----	198	---	2	---	---	200
Hawaii-----	---	---	---	146	---	146
Idaho-----	---	1,040	833	3,388	1	5,262
Illinois-----	13,748	1,531	17,641	---	696	33,616
Indiana-----	26,518	---	---	---	588	27,106
Iowa-----	3,094	178	16,646	2,201	5,400	27,519
Kansas-----	---	---	677	---	---	677
Kentucky-----	291,459	313	21,680	1,641	22,282	337,375
Louisiana-----	---	---	---	---	---	---
Maine-----	---	---	---	---	---	---
Maryland-----	449	---	122	4	---	575
Massachusetts-----	---	---	83	---	---	83
Michigan-----	---	2,883	7,775	3,656	13,430	27,744
Minnesota-----	---	2,274	1,575	6,650	16,830	27,329
Mississippi-----	---	---	1,800	---	32	1,832
Missouri-----	5,035	572	13,992	5,540	---	25,139
Montana-----	28,626	19,000	5,000	---	---	52,626
Nebraska-----	---	---	---	---	---	---
Nevada-----	---	18,830	15	137	21	19,003
New Hampshire-----	---	---	---	---	---	---
New Jersey-----	---	---	---	---	---	---
New Mexico-----	23,134	22,015	3,883	1,369	---	50,401
New York-----	---	379	1,709	822	---	2,910
North Carolina-----	---	---	3	15	---	18
North Dakota-----	760	---	187	---	182	1,129
Ohio-----	98,074	73	21,027	1,964	7,266	128,404
Oklahoma-----	---	---	4,712	154	---	4,866
Oregon-----	---	---	386	2,878	---	3,264
Pennsylvania:						
Anthracite-----	30,053	---	---	---	---	---
Bituminous-----	319,030	735	16,049	9,330	13,465	388,662
Rhode Island-----	---	---	---	---	---	---
South Carolina-----	---	---	---	---	---	---
South Dakota-----	---	---	---	---	---	---
Tennessee-----	11,737	8,319	15,112	32,345	4,465	71,978
Texas-----	---	---	12,094	15,384	---	27,478
Utah-----	202	25,857	10,200	---	---	36,259
Vermont-----	---	---	---	---	---	---
Virginia-----	40,401	---	1,345	1,616	---	43,362
Washington-----	---	2,532	---	7,998	---	10,530
West Virginia-----	97,011	1,186	997	10,092	12,604	121,890
Wisconsin-----	---	---	3,536	1,100	1,094	5,730
Wyoming-----	65,432	4,847	2,003	---	---	72,282
Undistributed ^{3/}	^{4/}	^{4/}	^{4/}	^{4/}	45,940	45,940
Total-----	1,261,783	239,868	217,430	146,602	146,904	2,012,587

^{1/} Includes some quantities of permissible explosives and other high explosives.

^{2/} Included with Maryland.

^{3/} Quantities undistributed to avoid disclosing individual company data.

^{4/} Undistributed quantity for this use is included with undistributed "All other purposes."