

## NITROGEN (FIXED)—AMMONIA

(Data in thousand metric tons of nitrogen, unless otherwise noted)

**Domestic Production and Use:** U.S. ammonia producers continued to operate slightly below rated capacity. Fifty-eight percent of total U.S. ammonia production capacity was centered in Louisiana, Oklahoma, and Texas because of their large reserves of natural gas, the dominant domestic feedstock. The United States remained the world's second largest ammonia producer and consumer following China. Urea, ammonium phosphates, ammonium nitrate, nitric acid, and ammonium sulfate were the major derivatives of ammonia in the United States, in descending order of importance.

Approximately 86% of U.S. apparent domestic ammonia consumption was for fertilizer use, including anhydrous ammonia for direct application, urea, ammonium nitrates, ammonium phosphates, and other nitrogen compounds. Ammonia was also used to produce plastics, synthetic fibers, and resins, explosives, and numerous other chemical compounds.

<b>Salient Statistics—United States:</b> <sup>1</sup>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998<sup>e</sup></b>
Production <sup>2</sup>	13,300	13,000	13,200	13,200	13,000
Imports for consumption	3,450	2,630	3,390	3,530	3,600
Exports	215	319	435	395	400
Consumption, apparent	16,500	15,300	16,300	15,800	16,100
Stocks, producer, yearend	956	959	881	1,530	1,600
Price, dollars per ton, average, f.o.b. Gulf Coast <sup>3</sup>	211	212	190	173	125
Employment, plant, number <sup>4</sup>	2,500	2,500	2,500	2,500	2,500
Net import reliance <sup>4</sup> as a percent of apparent consumption	19	15	19	16	19

**Recycling:** None.

**Import Sources (1994-97):** Trinidad and Tobago, 46%; Canada, 37%; Mexico, 10%; Venezuela, 2%; and other, 5%. In addition, the United States imports significant quantities of ammonia from Russia and Ukraine, but the Bureau of the Census quantity data are suppressed, so these data are not included in the calculation of import sources.

<b>Tariff: Item</b>	<b>Number</b>	<b>Normal Trade Relations (NTR)</b> <b>12/31/98</b>	<b>Non-NTR<sup>5</sup></b> <b>12/31/98</b>
Ammonia, anhydrous	2814.10.0000	Free	Free.
Ammonia, aqueous	2814.20.0000	Free	Free.

**Depletion Allowance:** Not applicable.

**Government Stockpile:** None.

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**Events, Trends, and Issues:** U.S. ammonia producers operated at about 90% of installed capacity in 1998. Production decreased from the 1997 level as prices dropped throughout the year. The Asian financial crisis, coupled with a wet spring in the United States, had a negative effect on Gulf Coast ammonia prices. Ammonia prices continued the decline begun in 1997, and by November, the Gulf Coast ammonia price had dropped to \$102 per short ton. With the addition of two new 650,000-ton-per-year ammonia plants that started operation in Trinidad in 1998 and debottlenecking and incremental additions to U.S. ammonia plants, ammonia was in oversupply during most of the year. U.S. farm exports also decreased in 1998 because of large world grain crops, a slowdown in Asian purchases, and the strength of the U.S. dollar.

In the United States, one ammonia producer with plants in Alaska, California, and Washington announced plans to sell its nitrogen operations in order to concentrate on its core energy business. Because of changing economic conditions, another ammonia producer decided not to proceed with construction of a 665,000-ton-per-year ammonia complex that was planned for Wells, NV. Planning continued for the development of new nitrogen projects around the world, particularly in Asia, Australia, and South America. But because of the depressed Asian economy, completion of several of the Asian projects was postponed.

### **World Ammonia Production, Reserves, and Reserve Base:**

	Plant production		Reserves and reserve base <sup>6</sup>
	1997	1998 <sup>e</sup>	
United States	13,200	13,000	Available atmospheric nitrogen and sources of natural gas for production of ammonia are considered adequate for all listed countries.
Canada	3,980	3,800	
China	24,000	25,000	
Germany	2,470	2,600	
India	8,600	9,300	
Indonesia	3,770	3,600	
Japan	1,570	1,400	
Mexico	1,450	1,600	
Netherlands	2,500	2,300	
Russia	7,150	5,000	
Trinidad and Tobago	1,800	2,000	
Ukraine	3,500	3,400	
Other countries	<u>27,400</u>	<u>27,500</u>	
World total (rounded)	101,000	101,000	

**World Resources:** The availability of nitrogen from the atmosphere for fixed nitrogen production is unlimited. Mineralized occurrences of sodium and potassium nitrates, found in the Atacama Desert of Chile, contribute minimally to global nitrogen demand.

**Substitutes:** Nitrogen is an essential plant nutrient that has no substitute. Also, there are no known practical substitutes for nitrogen explosives and blasting agents.

<sup>e</sup>Estimated.

<sup>1</sup>U.S. Department of Commerce (DOC) data unless otherwise noted.

<sup>2</sup>Annual and preliminary data as reported in Bulletins MA28B and MQ28B (DOC).

<sup>3</sup>Source: Green Markets Fertilizer Intelligence Weekly, a Pike and Fischer publication.

<sup>4</sup>Defined as imports - exports + adjustments for Government and industry stock changes.

<sup>5</sup>See Appendix B.

<sup>6</sup>See Appendix D for definitions.