Specialty Gases

US Industry Study with Forecasts for **2011 & 2016**

Study #2192 | May 2007 | $4400 | 228 pages

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The Freedonia Group

767 Beta Drive

Cleveland, OH • 44143-2326 • USA

Toll Free US Tel: 800.927.5900 or +1 440.684.9600

Fax: +1 440.646.0484

E-mail: info@freedoniagroup.com

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Specialty Gases

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Lighting will be one of the fastest growing markets for specialty gases in the US through 2011, driven by rapid growth in krypton and xenon in high efficiency light bulbs.

US specialty gases demand to grow 5% annually through 2011

Specialty gas demand in the US is forecast to expand 5.0 percent per year to $3.6 billion in 2011. Best opportunities are expected in the important electronics and manufacturing sectors, although fast growth is also expected in a variety of new and/or lower volume applications such as home health care, propellants and packaging. Volume gains will accelerate in line with faster growth in manufacturing output (in inflation-adjusted terms) and electronics production, although value will be limited to some extent by a moderation in prices after spikes in 2005 and 2006.

US Specialty Gases Demand
($2.8 billion, 2006)

Electronics to be largest, fastest growing market

The electronics industry will record the fastest growth and remain the largest individual market. The majority of specialty gases used in this industry serve in the manufacture of semiconductors, either as an atmospheric, etching and cleaning, dopant or precursor gas. Atmospheric gases, primarily nitrogen, represent the largest segment of this market, but will grow at a below-average pace as growth is related more closely to new fab construction than to increasing chip output. Dopants, such as diborane, arsine and phosphine, will experience the most rapid gains, as the production of semiconductors increases and performance requirements become even more stringent. Other applications, such as optical fibers and solar cells, will also register rapid gains.

Manufacturing, excluding electronics, will continue to represent a large market for specialty gases. Decelerating demand in the large chemical market will restrain growth, as intense overseas competition places pressure on US chemical producers. Analytical gases used for instrument calibration and environmental monitoring will grow more rapidly than other applications in the chemical industry, due to the increasing need to monitor pollutants and maximize production efficiency. Lighting will be one of the fastest growing markets for gases, driven by rapid growth in krypton and xenon in high efficiency light bulbs. The laser industry will also provide opportunities for solid growth despite the maturity of industrial laser applications.

Prospects in a variety of smaller markets will be mixed. Demand in health care applications will decelerate, with sluggish growth in institutional applications offsetting strong gains in the home health care market. Growth in government/academia markets will slow significantly, primarily due to a moderation in helium prices, but also due to competition from onsite gas generators.

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Sample Text, Table & Chart

TABLE III-2

HIGH PURITY ATMOSPHERIC GAS DEMAND BY TYPE & MARKET (million dollars)

Item	1996	2001	2006	2011	2016
Gross Domestic Product (bil $)	7817	10128	13250	17000	21700
$ gas/mil$ GDP	71.4	64.5	66.8	66.8	67.3
High Purity Atmospheric Gas Demand					
By Type:					
Nitrogen					
Oxygen					
By Market:					
Electronics					
Manufacturing					
Health Care					
Government/Academia					
Other					
% atmospheric					
Total Specialty Gas Demand					

SAMPLE TABLE

PRODUCTS

Oxygen

Oxygen, which constitutes 21 percent of the atmosphere
readily separated from air th … ygen
gies. Oxygen purified to a l … er is
considered high purity. Der … is fo
rise 5.7 percent annually to … ed by
in the electronics and medic … exp
oxygen used in the producti … tics.
also serves as a component o … for an
plications in the chemical processing industry.

SAMPLE TEXT

Oxygen is used in several applications in the medical m… Gains in this market will result from the aging population, si… health care will be necessary for the growing number of olde… als. Oxygen is commonly utilized for the respiratory care of patients and supplied to hospitals through the installation of bulk tanks or large cylinders. Other than its use in respiratory systems, oxygen is used in emergency care and in various testing procedures, including computed tomography (CT or CAT scans) and pulmonary functions testing, as well as in medical research, primarily as an atmospheric gas used to control the growth of bacteria. Oxygen is also necessary for hyperbaric oxygen therapy, which may be used to treat a variety of conditions, from decompression sickness to carbon monoxide poisoning and even severe burns. In addition to respiratory applications in the health care field, oxygen is also used in breathing mixtures for deep sea diving.

Oxygen demand in the electronics market will be driven by an improvement in electronic component shipments. In this market, oxygen is used during the manufacture of semiconductors for the chemical vapor deposition (CVD) of silicon dioxide, thermal oxide growth, plasma etching and plasma stripping of photoresists. Similarly, oxygen is used as a silicon precursor for the production of solar cells. Solar, or photovoltaic,

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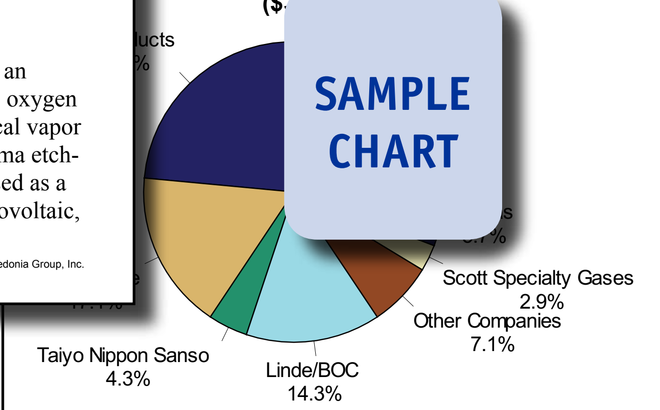
CHART V-1

…ECIALTY GAS SALES BY COMPANY, 2006*



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Specialty Gases

US Industry Study with Forecasts for ***2011 & 2016***

Sample Profile, Table & Forecast

TABLE IV-7

CHEMICAL PROCESSING MARKET FOR SPECIALTY GASES
(million dollars)

Item	1996	2001	2006	2011	2016
Chemical Product Shpts (bil $)	29				0.0
$ gas/000$ chemicals					.2
Chemical Mkt for Specialty Gas					77
By Function:					
Analytical					00
Other					77
By Type:					
Carbon					57
Noble					79
Halogen					70
Atmospheric					59
Other					12
% chemical processing					3
Total Manufacturing Gas Demand	69	882	1157	1443	1815

SAMPLE TABLE

COMPANY PROFILES

Honeywell International Incorporated
101 Columbia Road
Morristown, NJ 07962
973-455-2000
http://www.honeywell.com

Sales: $3
US Sales
Employr

Key Proc uorocarbon gas blends, b

Hon facturer that offers a variety o Company operates in five segments: Aerospace, Automation and Control Solutions, Specialty Materials, Transportation Systems, and Corporate.

The Company is active in the US specialty gases market through the Specialty Materials segment, which had sales of $4.6 billion in 2006. Among the various products manufactured and marketed through the segment are fluorocarbon and fluorine specialty products. Honeywell's range of fluorocarbon products includes OXYFUME ethylene oxide gas blends. These non-flammable, sterilant gases are used in the manufacture of single-use medical devices and to process reusable medical devices in hospitals. In addition, the Company makes STERIFLO, which is a non-flammable, sterilant hydrofluorocarbon gas that is designed to replace certain OXYFUME blends, which will be phased out of production by 2030.

Among the fluorine specialty products made by Honeywell are boron trifluoride (BF3) and sulfur hexafluoride (SF6). The Company

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SAMPLE PROFILE

"**Specialty Gas Demand** -- Demand for specialty gases in the chemical processing industry will increase 3.9 percent annually to $561 million in 2011, representing about 39 percent of total chemical demand. Though a deceleration from the previous five-year period, demand will continue to benefit from compliance with the Clean Air Act, requiring the daily calibration of various emissions monitoring equipment. Limiting gains will be the sluggish ..."

--Section IV, pg. 98

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Other Studies

World Fluorochemicals

This study analyzes the world market for fluorochemicals. It presents historical demand data for the years 1996, 2001 and 2006 and forecasts for 2011 and 2016 by type (HCFCs, HFCs, CFCs, inorganic and specialty fluorochemicals, fluoropolymers), market (e.g., refrigerants, aluminum production, blowing agents, components), world region and major country. This study also considers market environment and regulatory factors, details industry structure and market share, and profiles major players.

#2228 ..... 07/2007 ..... $5500

Flame Retardants

This study analyzes the US flame retardant industry. It presents historical demand data for the years 1996, 2001 and 2006, and forecasts for 2011 and 2016 by flame retardant product (e.g., brominated compounds, phosphorous compounds, alumina trihydrate), market (e.g., construction, electrical and electronic, motor vehicle), and resin (e.g., PVC, ABS, epoxy). The study also considers market environment factors, details industry structure, evaluates company market share and profiles major flame retardant producers.

#2217 ..... 07/2007 ..... $4400

Industrial Crystals

US industrial crystal demand will grow 5.8% yearly through 2011, led by uses in nonlinear optical materials and compound semiconductor substrates. Communications and security/defense will see the largest market gains. Transition metal-based crystals and semiconducting types will be the fastest growing materials. This study analyzes the $845 million US industrial crystal industry, with forecasts for 2011 and 2016 by material, application and market. It also evaluates market share and profiles leading players.

#2166 ..... 05/2007 ..... $4500

World Well Stimulation Materials

Global demand for well stimulation materials is forecast to increase 11.3% annually through 2010. Gains will be driven by high oil and gas prices coupled with maturing wells. Among the leading markets, China, Canada and Russia hold stronger prospects than the US. Proppants will be the largest and fastest growing product. This study analyzes the $2.5 billion world well stimulation material industry to 2010 and 2015 by product, key country and world region. It also evaluates market share and profiles major players.

#2161 ..... 03/2007 ..... $5400

Industrial Gases

US industrial gas demand will grow 3.6% annually through 2010. Best opportunities will remain in the key petroleum and natural gas market while faster growth will occur in smaller volume uses such as electronics and healthcare. Hydrogen will continue as the most valuable market while argon will be the fastest growing gas. This study analyzes the $8.4 billion US industrial gas industry to 2010 and 2015 by type, delivery method and market. It also details company market share and profiles major players.

#2149 ..... 02/2007 ..... $4400

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