Industrial and Specialty Gas – Helium Market Insights

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LEAGUE PARK

Investment Banking Solutions for the Middle Market

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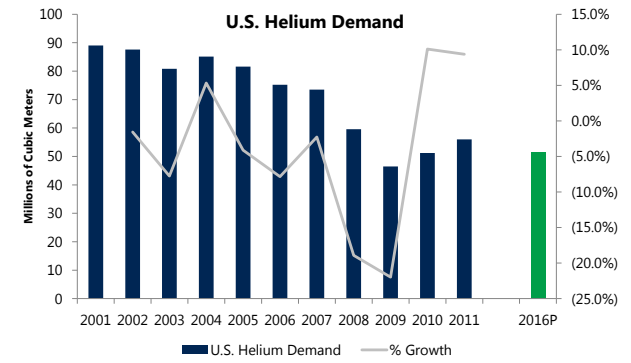
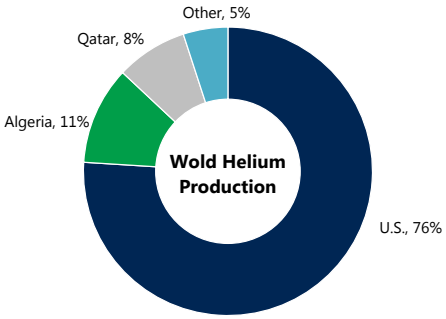
Overview

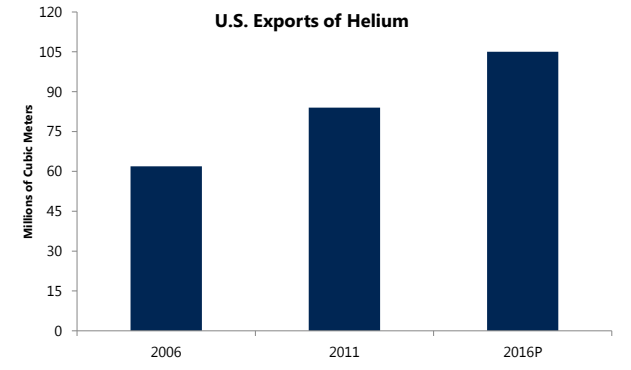
The U.S. helium market represents a $330 million segment of the $16 billion industrial and specialty gas market. Despite unit volume dropping from 75 million to 56 million cubic meters from 2006 to 2011, average helium prices increased nearly every year during this period, often at double-digit rates, which more than offset volume declines. Overall, the dollar value of helium shipments increased from $225 million in 2006 to $330 million in 2011. As unit prices have escalated, helium consuming industries have focused on using the gas more efficiently (i.e., retrieving or recycling systems) or employing cheaper substitutes (i.e., argon). In addition, unit demand will continue to be suppressed as supply and demand imbalances add uncertainty and price volatility. One notable exception to the aforementioned demand dynamics is the growing need for helium in medical applications such as magnetic resonance imaging ("MRI"). Overall, the domestic market for helium is projected to continue to decline in demand from 56 million to 52 million cubic meters from 2011 to 2016P; however, the value of helium demand will increase from $330 million to $410 million over the projected period.

Contrary to the weakening U.S. outlook is the sustained growth in overseas markets. The U.S. produces 76% of the world's helium and is expected to increase its exports by 25% from 84 million cubic meters in 2011 to 105 million cubic meters in 2016P. It is projected that U.S. domestic demand and exports will result in U.S. helium production increasing from 140 million to 157 million cubic meters from 2011 to 2016P. Despite soft domestic demand, the aforementioned global dynamics will continue to drive significant growth opportunities for industrial and specialty gas companies that distribute helium on a global basis.

Figure 1: Helium Market Summary







Sources: The Freedonia Group

II. Market Overview

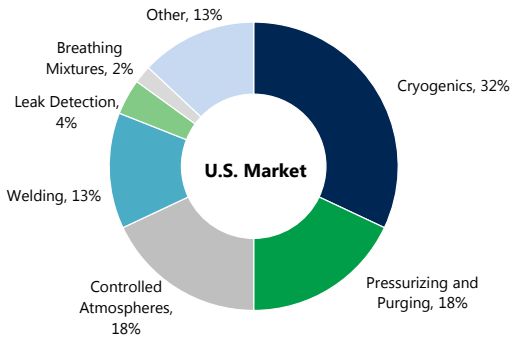
Market Definition and Segmentation

The primary end markets for helium include cryogenics, pressurizing and purging, controlled atmospheres, welding, leak detection, and breathing mixtures. The principal properties that drive helium demand are:

- Lightness – is lighter than air allowing for it to fill balloons in a safe manner (inflammability);
- Inertness – is the most inert substance in the universe, which provides for a broad range of blanketing applications from welding to food processing; and
- Gaseous – is a gas at temperatures that approach absolute zero, which provides for a range of cryogenic applications.

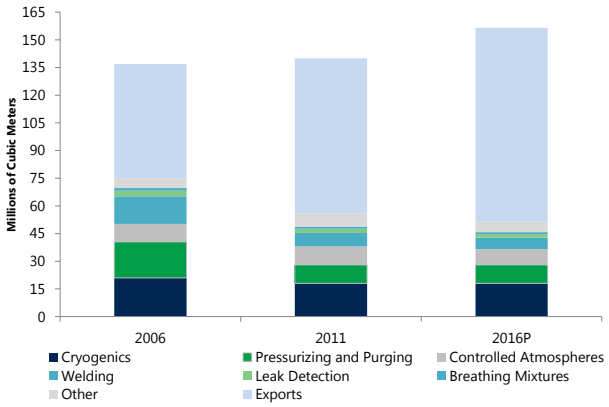
Although notable helium applications are mature, it is also being utilized in cutting edge applications lasers, magnetic levitating trains, next-generation nuclear reactors, and plasma cleaning.

Figure 2: U.S. Domestic Helium Demand by Market, 2011



Sources: The Freedonia Group

Figure 3: Helium Demand by Market, 2006 – 2016P



Sources: The Freedonia Group

Cryogenics

Demand for helium in cryogenic applications is primarily driven by its utilization in MRI equipment. MRIs utilize magnetic fields to produce detailed images of the human body and the machines use superconducting magnets to generate the magnetic field. Liquid helium is utilized within the MRI equipment to cool the superconducting magnets. Other cryogenic applications include scientific research and nuclear magnetic resonance spectroscopy.

The cryogenic helium market is anticipated to have a negligible change in unit volume over the period from 2011 to 2016P. An aging population and rising medical conditions will drive demand for MRI scans through the forecast period; however, newer generation MRI equipment utilizes less liquid helium than prior models.

Pressurizing and Purging

Helium is utilized in the pressurizing and purging market to create an inert atmosphere in fuel delivery systems and tanks. Demand in the pressurizing and purging market saw nearly a 50% decrease from 2006 to 2011 as U.S. chemical and allied product shipments plummeted.

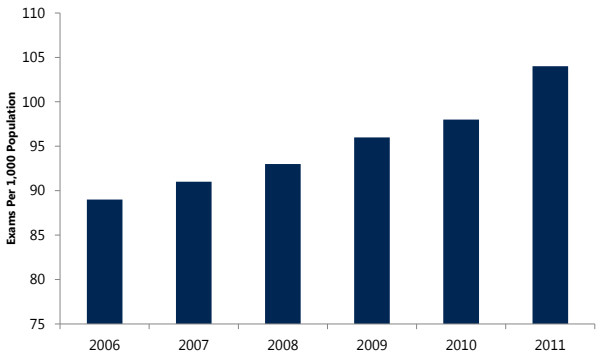
The pressurizing and purging helium market is anticipated to remain flat at 10 million cubic meters over the period from 2011 to 2016P. Growth in chemical and allied product shipments and aerospace equipment will aid in volume growth; however, more effective utilization of helium will likely offset these gains.

Controlled Atmospheres

Helium's inertness, low density, and high thermal conductivity has driven its use in the controlled atmospheres market. Unlike other market segments, volume consumption of helium in the controlled atmospheres market increased from 2006 to 2011. Primary applications within this segment include the production of optical fibers and metallurgical processes.

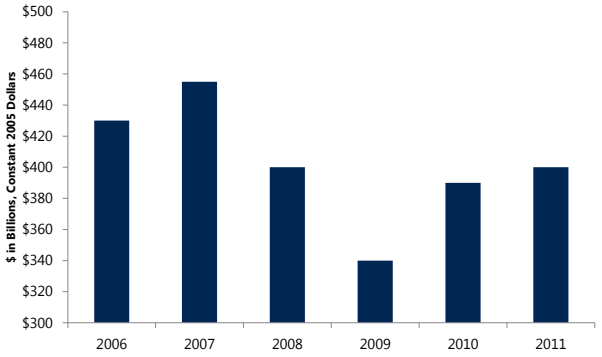
The controlled atmospheres helium market is anticipated to decline slightly in unit volume over the period from 2011 to 2016P. The decline is primarily driven by the utilization of lower cost substitutes such as argon or nitrogen. Declines in helium demand will be offset by increased semiconductor (UHP helium) and metal production.

Figure 4: U.S. MRI Exams, 2006 – 2011



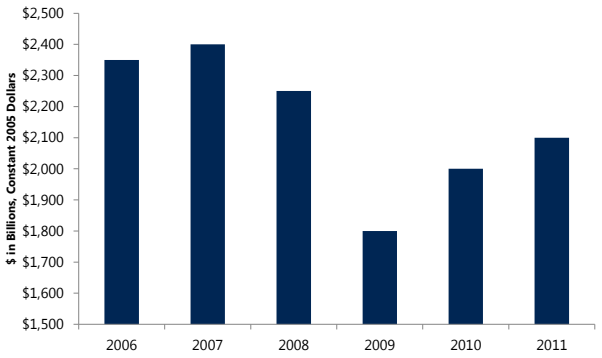
Sources: The Freedonia Group

Figure 5: U.S. Chemical and Allied Product Shipments, 2006 – 2011



Sources: The Freedonia Group

Figure 6: U.S. Durable Goods Shipments, 2006 – 2011



Sources: The Freedonia Group

Welding

Helium is utilized in the welding market to create a shield to protect the molten metal from atmospheric contamination. Similar to the controlled atmospheres market, the welding market for helium has also declined due to the availability of lower cost substitutes such as argon. Demand in the welding market declined from 15 million cubic meters in 2006 to 7 million cubic meters in 2011.

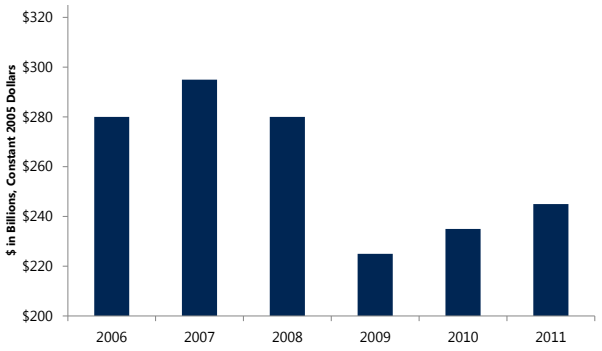
The forecasted welding market for helium is anticipated to only experience modest declines as much of the helium/argon substitution has already occurred.

Other Markets

The remaining 11 million cubic meters of domestic demand is comprised of the leak detection, breathing mixtures, and other miscellaneous markets.

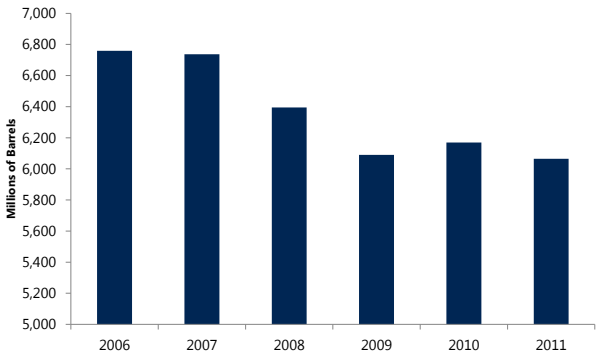
- Leak Detection – helium is run through closed systems to locate breaches in the system. Due to the increasing cost of helium, alternatives such as diluted hydrogen are being utilized. The leak detection market is projected to be 2 million cubic meters in 2016P, which is a slight decline from 2011.
- Breathing mixtures – helium is combined with oxygen to aid in patient breathing in healthcare applications. Respiratory ailments are the most common type of both acute and chronic medical conditions in the U.S. Despite positive trends in the aging population, replacement with alternative gases such as hydrogen will limit helium's growth. The breathing mixtures market is projected to be 1 million cubic meters in 2016P, which is a slight decline from 2011.
- Other markets – helium is also utilized in the lifting gas, chromatography, and heat transfer markets. Similar to other markets, helium's shortages and high prices have been driving its replacement with alternative gases such as hydrogen. The other markets are projected to be 6 million cubic meters in 2016P, which is a 4.5% annual decline from 2011.

Figure 7: U.S. Fabricated Metal Products, 2006 – 2011



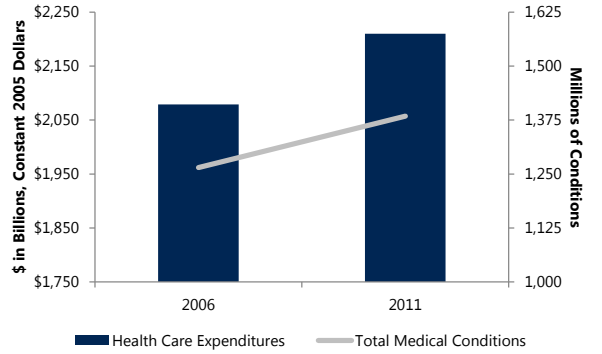
Sources: The Freedonia Group

Figure 8: U.S. Refined Petroleum Demand, 2006 – 2011



Source: The Freedonia Group

Figure 9: U.S. Medical Conditions, 2006 – 2011



Source: The Freedonia Group

Industry Trends

U.S. Continues to Dominate Production

Unlike other gas products, helium is not easily separated from air like oxygen or nitrogen, nor is it easily manufactured such as acetylene. Currently helium is economically produced as a byproduct of natural gas processing. Given that the U.S. possesses large quantities of natural gas, it has been positioned as the global leader in production and generates 76% of the world's supply. The relatively recent natural gas discoveries in the Marcellus Shale (estimated to have 49 trillion cubic feet of recoverable natural gas) have the U.S. well positioned to maintain its leadership position in helium production over the long-run.

Inelastic U.S. Supply

U.S. helium production is driven by approximately 20 plants, which creates a high level of inelasticity in supply and significant volatility in pricing. A recent example of the inelasticity of supply was experienced in 2011 when Exxon Mobil had an extended maintenance shutdown at its Wyoming helium plant, which is the largest helium facility in the world. The resultant helium shortage caused skyrocketing prices and forced other manufacturers to put their customers on allocation in 2011 and 2012. In response to continuing volatility in supply and pricing, other gas companies are looking at ways to develop new mixtures that eliminate or reduce helium consumption.

Significant Volatility in Pricing

Despite helium being an extremely common element, it is non-renewable and essentially irreplaceable on earth. Like oil and gas, the easiest to extract and cheapest helium reserves have already been exhausted. As a result, it is expected that helium prices will inevitably rise over the long-run and will have high levels of volatility in the short-run. The aforementioned pricing dynamic was recently seen in December 2012, when Praxair and Air Products announced price increases of up to 30% on liquid bulk helium.

Exports Offset Weak U.S. Demand

The finite supply of helium and its high market value support the export market. Despite declines in U.S. consumption of helium, exports more than made up the difference in volume from 2006 to 2011. In addition, helium exports are projected to increase at an annual growth rate of 4.6% (21 million cubic meters in total) from 2011 to 2016P. The majority of U.S. helium exports are sent to Japan, South Korea, China, Taiwan, France, England, and Belgium.

Broad Spectrum of Manufacturers

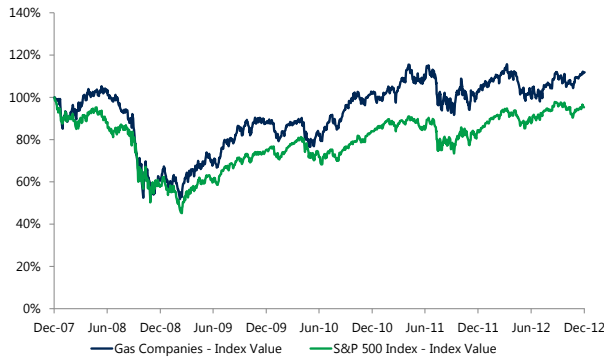
Unlike other gas products, the helium market has a broad spectrum of participating manufacturers. Similar to the broader industrial and specialty gas market, the industry is led by Air Products, Linde, and Praxair; however, manufacturers also include: BP, Exxon Mobil, DCP Midstream, IACX Energy, K-L Energy Midstream Energy, Nacogdoches Oil & Gas, ONEOK, Pioneer Natural Resources, SemGroup, Air Gas, Air Liquide, and Matheson. Due to the high cost of facilities construction, companies also joint venture in the construction of new plants such as Air Products and Matheson's new Big Piney, Wyoming plant.

III. Financial Analysis

Publicly-traded industrial and specialty gas companies have significantly outperformed the broader equity market (i.e., S&P 500 Index) trends over the past five years, and have been steadily expanding since Q1 2012. As of December 31, 2012, the median public company is trading at 94.3% of its 52 week high. Public company valuations multiples remain strong after their recovery since the steep decline in 2008. The median Earnings Before Interest, Tax, Depreciation, and Amortization ("EBITDA") multiple for industrial and specialty gas companies was 9.9x as of December 31, 2012.

Figure 10: Relative Stock Price Performance

January 1, 2008 – December 31, 2012



Source: CapitalIQ

Figure 11: Relative Stock Price Performance

As of December 31, 2012

	Price as of 12/31/12	52 Week High	52 Week Low	% of High
L'Air Liquide SA	$125.32	$131.85	$110.28	95.0%
Praxair	173.77	180.42	144.51	96.3%
The Linde Group	109.45	116.93	100.00	93.6%
Air Products & Chemicals	84.02	92.79	76.11	90.5%
Taiyo Nippon Sanso (Matheson)	91.29	93.46	75.78	97.7%
Airgas Inc.	5.71	6.88	4.19	83.0%
Low	**$5.71**	**$6.88**	**$4.19**	**83.0%**
Average	**$98.26**	**$103.72**	**$85.14**	**92.7%**
Median	**$100.37**	**$105.20**	**$88.06**	**94.3%**
High	**$173.77**	**$180.42**	**$144.51**	**97.7%**

Source: CapitalIQ

Figure 12: Industry Financial Analysis

As of December 31, 2012

$ in millions

	Last Twelve Months (LTM)			LTM Margins			YoY Change LTM	YoY Change LTM Margins		
	Revenue	EBIT	EBITDA	Gross	EBIT	EBITDA	Revenue	Gross	EBIT	EBITDA
L'Air Liquide SA	$19,822.9	$3,173.5	$4,709.9	60.2%	16.0%	23.8%	4.4%	(0.5%)	3.5%	3.4%
Praxair	11,221.0	2,475.0	3,471.0	42.9%	22.1%	30.9%	1.3%	0.5%	2.4%	1.8%
The Linde Group	19,311.5	2,429.0	3,817.0	36.4%	12.6%	19.8%	7.1%	1.3%	6.1%	(3.6%)
Air Products & Chemicals	9,611.7	1,525.3	2,366.1	26.6%	15.9%	24.6%	(0.6%)	0.0%	(1.3%)	(0.6%)
Taiyo Nippon Sanso (Matheson)	5,553.7	328.6	717.4	32.4%	5.9%	12.9%	(2.1%)	(2.9%)	(16.1%)	(9.8%)
Airgas Inc.	4,881.8	591.8	871.3	54.7%	12.1%	17.8%	8.8%	0.4%	7.8%	7.6%
Low	**$4,881.8**	**$328.6**	**$717.4**	**26.6%**	**5.9%**	**12.9%**	**(2.1%)**	**(2.9%)**	**(16.1%)**	**(9.8%)**
Average	**$11,733.7**	**$1,753.9**	**$2,658.8**	**42.2%**	**14.1%**	**21.6%**	**3.1%**	**(0.2%)**	**0.4%**	**(0.2%)**
Median	**$10,416.4**	**$1,977.2**	**$2,918.6**	**39.6%**	**14.2%**	**21.8%**	**2.8%**	**0.2%**	**3.0%**	**0.6%**
High	**$19,822.9**	**$3,173.5**	**$4,709.9**	**60.2%**	**22.1%**	**30.9%**	**8.8%**	**1.3%**	**7.8%**	**7.6%**

Source: CapitalIQ

Figure 13: Industry Valuations

As of December 31, 2012
$ in millions

	Market Cap 12/31/12	Enterprise Value*	Total Debt / LTM EBITDA	Total Debt / Capital	Enterprise Value / LTM Revenue	Enterprise Value / LTM EBIT	Enterprise Value / LTM EBITDA
L'Air Liquide SA	$38,960.6	$47,297.3	2.0x	19.5%	2.38x	14.9x	10.0x
Praxair	32,176.2	45,056.5	3.2x	30.1%	2.33x	18.5x	10.5x
The Linde Group	32,520.4	40,122.4	1.9x	18.0%	3.58x	16.5x	10.5x
Air Products & Chemicals	17,883.7	23,283.8	2.2x	22.9%	2.42x	15.3x	9.8x
Taiyo Nippon Sanso (Matheson)	7,129.9	5,523.0	2.5x	23.3%	1.13x	9.3x	6.3x
Airgas Inc.	2,266.7	4,881.7	4.1x	56.1%	0.90x	15.2x	7.0x
Low	**$2,266.7**	**$4,881.7**	**1.9x**	**18.0%**	**0.90x**	**9.3x**	**6.3x**
Average	**$21,822.9**	**$27,694.1**	**2.3x**	**28.3%**	**2.12x**	**14.9x**	**9.0x**
Median	**$25,030.0**	**$31,703.1**	**2.2x**	**23.1%**	**2.35x**	**15.2x**	**9.9x**
High	**$38,960.6**	**$47,297.3**	**4.1x**	**56.1%**	**3.58x**	**18.5x**	**10.5x**

* - Enterprise Value includes Preferred Equity and Cash.

Source: CapitalIQ

Figure 14: Trends in Industry Valuations

As of December 31, 2003 - 2012
multiples of TEV / EBITDA

	12/31/2012	12/31/2011	12/31/2010	12/31/2009	12/31/2008	12/31/2007	12/31/2006	12/31/2005	12/31/2004	12/31/2003
L'Air Liquide SA	10.0x	9.6x	10.4x	9.8x	7.9x	11.0x	10.1x	9.6x	8.4x	8.2x
Praxair	10.5x	8.4x	9.2x	8.6x	6.5x	9.4x	12.9x	6.5x	6.0x	5.4x
The Linde Group	10.5x	11.4x	12.5x	12.4x	8.0x	13.0x	10.4x	10.9x	10.6x	11.2x
Air Products & Chemicals	9.8x	8.3x	9.5x	9.9x	5.8x	10.7x	9.5x	8.8x	9.3x	9.8x
Taiyo Nippon Sanso (Matheson)	6.3x	10.1x	9.8x	8.0x	6.7x	10.2x	9.2x	9.5x	9.9x	9.4x
Airgas Inc.	7.0x	6.4x	7.7x	11.5x	6.6x	8.9x	10.5x	10.1x	8.2x	9.2x
Low	**6.3x**	**6.4x**	**7.7x**	**8.0x**	**5.8x**	**8.9x**	**9.2x**	**6.5x**	**6.0x**	**5.4x**
Average	**9.0x**	**9.0x**	**9.9x**	**10.0x**	**6.9x**	**10.5x**	**10.4x**	**9.2x**	**8.7x**	**8.9x**
Median	**9.9x**	**9.0x**	**9.7x**	**9.9x**	**6.7x**	**10.5x**	**10.3x**	**9.6x**	**8.9x**	**9.3x**
High	**10.5x**	**11.4x**	**12.5x**	**12.4x**	**8.0x**	**13.0x**	**12.9x**	**10.9x**	**10.6x**	**11.2x**

Source: CapitalIQ

League Park Overview

League Park is a boutique investment bank that professionally and ethically advises clients on strategies aimed to maximize shareholder value. We assist middle market companies with transactions that generate value through mergers and acquisitions, recapitalizations, capital raising, and outsourced corporate development.

Whatever the transaction, our clients receive specialized attention from senior bankers at every step in the deal process. Our team has decades of investment banking, corporate development, private equity, and operational experience, completing over 300 transactions across a diverse range of industries in the past 25 years.

Advisory Capabilities:

Mergers and Acquisitions
Recapitalizations
Capital Raising
Outsourced Corporate Development

Industry Expertise:

Business Services
Healthcare
Technology
Retail and Consumer Products
Industrial

- Automotive
- Building Products and Construction
- Distribution
- **Industrial and Specialty Gas**
- Industrial Services
- Metals
- Paper, Print and Packaging
- **Specialty Chemicals**
- Specialty Glass

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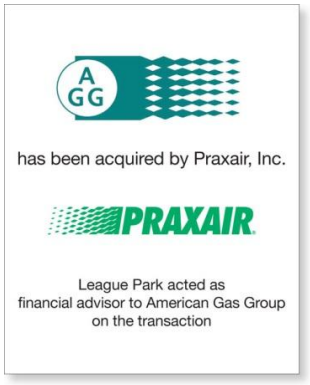
American Gas Group



Company Overview

American Gas Group is one of the largest independent specialty gas distributors in North America. The company specializes and packages a variety of specialty gases including EPA Protocols, hydrocarbons, VOC mixtures, reactive mixtures, high-purity chemicals, and research-grade gases in addition to industrial and medical gas products. The American Gas Group procures its products on a global basis and is a known industry leader for supply of rare gases and gas mixtures. The company's unique packaging capabilities and breadth and depth of inventory provide customers with one-stop for all their specialty gas and hard goods needs.

Transaction Overview

Given American Gas Group's strong market position and its history of significant growth, the shareholders decided to explore their strategic options with regard to a potential sale transaction. After reviewing the competitive landscape in North America, League Park and the company prepared detailed synergy analysis for the most likely acquirer of the business, Praxair, which is the largest industrial gases company in North and South America. In late 2011, Praxair acquired the American Gas Group and is focused on continuing to drive its strong market position and its history of growth.

VanDeMark Chemical

Company Overview

VanDeMark Chemical ("VanDeMark"), a portfolio company of Buckingham Capital, is a leading global producer of specialty, intermediate, and catalyst chemicals utilizing phosgenation chemistry. The company serves a diverse base of loyal customers from a broad range of end markets, including pharmaceutical, agricultural, paints and coatings, plastics and polymers, and sealants and adhesives. VanDeMark maintains key customer and distribution relationships throughout North and South America, Europe, Australia, and Asia. The company's research and development department has distinguished VanDeMark within its customers' organizations.

Transaction Overview

The company engaged League Park to explore a potential sale transaction. League Park contacted a broad spectrum of potential strategic and financial buyers, which resulted in VanDeMark being acquired by Uni-World Capital and Brightwood Capital in late 2012.

Sources and Disclosure

Sources Referenced

Bureau of Labor Statistics
Capital IQ
Company Investor Presentations
Equity Research
SEC Filings and Forms (EDGAR)
Standard & Poor's
The Freedonia Group
U.S. Census Bureau
U.S. Department of Commerce
U.S. Department of Transportation

The Freedonia Group

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