

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 11-K

(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2012

OR

TRANSITION REPORT PURSUANT TO SECTION 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

Commission file numbers: 333-75256 and 333-175676

A. Full title of the plan and the address of the plan, if different from that of the issuer named below:

Airgas, Inc. 401(k) Plan

B. Name of the issuer of the securities held pursuant to the plan and the address of its principal executive office:

Airgas, Inc.
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283

AIRGAS, INC. 401(k) PLAN

December 31, 2012

Table of Contents

	<u>Page</u>
<u>Report of Independent Registered Public Accounting Firm</u>	<u>3</u>
<u>Statements of Net Assets Available for Benefits, December 31, 2012 and 2011</u>	<u>4</u>
<u>Statements of Changes in Net Assets Available for Benefits, Years Ended December 31, 2012 and 2011</u>	<u>5</u>
<u>Notes to Financial Statements</u>	<u>6</u>
Supplemental Schedule:	
<u>Schedule H, Line 4i - Schedule of Assets (Held at End of Year), December 31, 2012</u>	<u>14</u>
<u>Signatures</u>	<u>15</u>
<u>Exhibit Index</u>	

Report of Independent Registered Public Accounting Firm

To Participants and the Plan Administrator of Airgas, Inc. 401(k) Plan:

We have audited the accompanying statements of net assets available for benefits of Airgas, Inc. 401(k) Plan (the "Plan") as of December 31, 2012 and 2011, and the related statements of changes in net assets available for benefits for the years then ended. These financial statements are the responsibility of the Plan's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the net assets available for benefits of the Plan as of December 31, 2012 and 2011, and the changes in net assets available for benefits for the years then ended, in conformity with accounting principles generally accepted in the United States of America.

Our audits were performed for the purpose of forming an opinion on the basic financial statements taken as a whole. The supplemental schedule of Schedule H, Line 4i - Schedule of Assets (Held at End of Year) as of December 31, 2012 is presented for the purpose of additional analysis and is not a required part of the basic financial statements but is supplementary information required by the Department of Labor's *Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974*. The supplemental schedule is the responsibility of the Plan's management. The supplemental schedule has been subjected to the auditing procedures applied in the audits of the basic financial statements and, in our opinion, is fairly stated in all material respects in relation to the basic financial statements taken as a whole.

/s/ KPMG LLP

Philadelphia, Pennsylvania
June 27, 2013

AIRGAS, INC. 401(k) PLAN
Statements of Net Assets Available for Benefits

	December 31,	
	2012	2011
Assets:		
Investments, at fair value (Notes 3 and 4)	\$ 638,111,522	\$ 556,845,897
Receivables:		
Employee contributions	782,055	1,983,084
Employer contributions	216,222	559,768
Notes receivable from participants	20,706,261	19,252,786
Total receivables	<u>21,704,538</u>	<u>21,795,638</u>
Net assets, reflecting investments at fair value	659,816,060	578,641,535
Adjustment from fair value to contract value for fully benefit-responsive investment contracts	(5,158,096)	(4,401,995)
Net assets available for benefits	<u>\$ 654,657,964</u>	<u>\$ 574,239,540</u>

See accompanying notes to the financial statements.

AIRGAS, INC. 401(k) PLAN
Statements of Changes in Net Assets Available for Benefits

	Years Ended December 31,	
	2012	2011
Additions:		
Additions to net assets attributable to:		
Investment income:		
Net appreciation in fair value of investments (Note 3)	\$ 51,762,759	\$ 17,877,753
Interest and dividends	17,662,407	12,491,924
Total investment income, net	69,425,166	30,369,677
Contributions:		
Employee	42,640,391	37,741,690
Employer	11,241,140	10,307,238
Rollovers	4,664,276	2,126,790
Total contributions	58,545,807	50,175,718
Transfers from other plans and other additions	24,328	4,483,252
Total additions	127,995,301	85,028,647
Deductions:		
Benefits paid to participants	(47,160,482)	(40,703,656)
Administrative fees	(416,395)	(405,403)
Total deductions	(47,576,877)	(41,109,059)
Net additions	80,418,424	43,919,588
Net assets available for benefits:		
Beginning of year	574,239,540	530,319,952
End of year	<u>\$ 654,657,964</u>	<u>\$ 574,239,540</u>

See accompanying notes to the financial statements.

AIRGAS, INC. 401(k) PLAN

Notes to Financial Statements

(1) Description of the Plan

The following description of the Airgas, Inc. 401(k) Plan (the “Plan”) provides general information only. Participants should refer to the Plan document for more complete information.

(a) General

The Plan is a defined contribution plan covering substantially all employees of Airgas, Inc. and subsidiaries (“Airgas” or the “Company”). Included in the assets of the Plan are rollovers and transfers from other plans of acquired companies, where applicable. The Plan is subject to the provisions of the Employee Retirement Income Security Act of 1974 (“ERISA”). Vanguard Fiduciary Trust Company serves as the trustee for the Plan.

(b) Contributions

Employee

The Plan permits a participant to defer up to 50% of eligible compensation, subject to the maximum dollar limitation in the calendar year as prescribed by the Internal Revenue Service (“IRS”). The Plan allows both 401(k) contributions, which are made from pre-tax earnings and are fully taxable as ordinary income at the time of distribution, as well as Roth 401(k) contributions. Under the Roth 401(k) contribution election, participant contributions are made from after-tax earnings that will be tax-free at the time of distribution. Participants are allowed to make both 401(k) and Roth 401(k) contributions into the Plan. Employee contributions receivable at December 31, 2012 and 2011 represent payroll contributions withheld through the end of each calendar year that were received by the Plan in the subsequent year.

Employer

Contributions to the Plan by the Company are made on a matched basis at a rate of 50% of participant deferred compensation. The employer match is applied on employee contributions of up to 4% of eligible compensation (i.e., maximum employer match is 2% of eligible compensation). Although employees may participate in the Plan immediately upon joining the Company, Plan participants are not eligible for Company matching contributions until they have completed one year of service with the Company. Employer contributions receivable at December 31, 2012 and 2011 represent Company matching contributions through the end of each calendar year that were received by the Plan in the subsequent year.

Rollovers

Contributions to the Plan for the years ended December 31, 2012 and 2011 include \$4,664,276 and \$2,126,790, respectively, of rollover contributions from newly hired employees and employees associated with businesses acquired by the Company. Rollovers reflect employee elections to rollover funds from their former plans into the Plan.

Refunds of Excess Contributions

In accordance with rules prescribed by the Internal Revenue Code (“IRC”), the trustee performed certain tests of employee contributions to ensure that highly compensated employees do not contribute on average a higher percentage of their income than that of non-highly compensated employees. Additionally, the trustee performed a test of employee contributions to determine that individual participant contribution levels did not exceed the 2012 IRS contribution limit of \$17,000 for participants under age 50 or \$22,500 (including catch-up contributions) for participants age 50 and over. An immaterial amount of refunds were required for the years ended December 31, 2012 and 2011.

(c) Participant Accounts

Contributions are invested as directed by each participant in 14 separate investment funds. Each participant may designate, by electronic monitoring, how the contributions to his or her account are to be allocated among the 14 funds. Participants are required to allocate contributions to the funds in increments of 1% of total contributions. In the event a participant fails to submit an allocation, contributions will be invested in the Vanguard LifeStrategy Conservative Growth Fund. In addition to the above initial election, participants may elect, by contacting the trustee, to transfer monies among the investment funds in 1% increments of the total funds credited to their account. Interest, dividends and other income (losses) earned by each investment fund, net of administrative fees, are reinvested in the same fund. Such amounts are allocated to participants based upon the proportion of a participant’s balance to the total fund balance.

AIRGAS, INC. 401(k) PLAN

Notes to Financial Statements (continued)

(d) Participant Loans

The Plan administrator may, upon the application of a participant, direct the trustee to make a loan to such a participant. The maximum the participant may borrow is limited to the lesser of 50% of the participant's Plan account balance or \$50,000. The minimum loan amount is \$1,000 and loans are secured by 50% of the participant's Plan account balance. Participant loans bear interest at a rate equal to the prime rate (as of the date of the loan) plus 2% and provide for periodic repayment over a reasonable period of time not to exceed five years for general purpose loans and 30 years for principal residence loans. The prime rate was 3.25% at December 31, 2012 and 2011. Interest rates on outstanding participant loans at December 31, 2012 ranged from 3.25% to 11.00%, with a weighted average interest rate of 5.45%. Interest rates on outstanding participant loans at December 31, 2011 ranged from 4.25% to 11.00%, with a weighted average interest rate of 5.67%. Interest rates on outstanding participant loans that are lower than the prime rate (as of the date of the loan) plus 2% can exist if loans were grandfathered into the Plan through plan-to-plan transfers of certain companies acquired by Airgas and those plans had different provisions than the Plan.

When a participant defaults on a loan obtained from the Plan, the Plan administrator will report the amount of default to the IRS as a distribution from the Plan. The Plan participant may then be subject to taxes and penalties related to the distribution.

(e) Vesting

Participants are immediately vested in all contributions. In addition, all earnings (losses) on such investments are fully vested.

(f) Payment of Benefits

Upon retirement, death or termination of service, participants or beneficiaries are entitled to a distribution equal to the total value of their accounts. Such distributions are generally payable in cash.

Participants experiencing serious financial hardships may be entitled to a distribution upon approval by the Plan administrator.

(g) Administrative Expenses

Recordkeeping, loan administrative fees and administrative fees related to processing Qualified Domestic Relations Orders ("QDROs") are paid by Plan participants. Loan origination fees are paid by Plan participants and included in notes receivable from participants on the Plan's Statements of Net Assets Available for Benefits. Stock administration, compliance testing, audit, legal, hardship withdrawal processing and company acquisition processing fees are paid by Airgas.

(2) Summary of Significant Accounting Policies

(a) Basis of Accounting

The accompanying financial statements of the Plan have been prepared on the accrual basis of accounting and present net assets available for benefits and changes in those net assets.

(b) Recently Adopted Accounting Pronouncements

On January 1, 2012, the Plan adopted Accounting Standards Update ("ASU") No. 2011-04, *Fair Value Measurement (Topic 820): Amendments to Achieve Common Fair Value Measurement and Disclosure Requirements in U.S. GAAP and IFRSs* ("ASU 2011-04"), which amended existing U.S. generally accepted accounting principles ("GAAP") with respect to fair value measurements. The majority of the key provisions of ASU 2011-04 represent clarifications to existing fair value measurement guidance, including changes in the valuation premise and the application of premiums and discounts. However, new disclosures are required under ASU 2011-04, including more robust disclosures related to Level 3 fair value measurements, a broader scope related to the disclosure of transfers between Level 1 and Level 2 fair value measurements, and new disclosures around the fair value hierarchy related to assets and liabilities disclosed at fair value but not measured as such on the statement of net assets available for benefits. Due to the nature of the Plan's investments, the adoption of ASU 2011-04 did not have a material impact on the Plan's disclosures.

(c) Investments

Units of the Airgas Common Stock Fund are valued based on the combined quoted market prices of the underlying shares of Airgas common stock and a money market component. Investments in shares of registered investment

AIRGAS, INC. 401(k) PLAN

Notes to Financial Statements (continued)

companies (or mutual funds) are valued at the net asset values of shares held by the Plan at year-end. Units of the Vanguard Retirement Savings Trust (the "Trust") are valued at the net asset value at year-end (discussed below).

The Plan invests in fully benefit-responsive investment contracts through the Trust. In accordance with the accounting guidance for fully benefit-responsive investment contracts held by employee benefit plans, the Statements of Net Assets Available for Benefits present the fair value of the Trust and the adjustment from fair value to contract value. The fair value of the Plan's interest in the Trust is based on information reported by the Trust at year-end. Depending on the mix of investments, fair value is determined based on the expected future cash flows for each contract discounted to present value, and the aggregate market values of the underlying investments in mutual funds, bond trusts and other investments. The contract value of the Trust represents contributions plus earnings, less participant withdrawals and administrative expenses.

Purchases and sales of investments are recorded on a trade-date basis. The average cost method is followed in determining the cost of investments sold. Interest income is accrued when earned. Dividend income is recorded on the ex-dividend date. Capital gain distributions are included in dividend income.

Investment options as of December 31, 2012 and 2011 were as follows:

- The *Airgas Common Stock Fund* invests in Airgas common stock to provide for the possibility of long-term growth through increases in the value of the stock, although a portion of the fund may be invested in cash or cash equivalents to maintain liquidity and avoid excessive turnover of Airgas common stock held in the fund. The fund value per unit was \$44.95 and \$38.52 at December 31, 2012 and 2011, respectively. The value per share of Airgas common stock was \$91.29 and \$78.08 at December 31, 2012 and 2011, respectively. At December 31, 2012, 3,579 Plan participants were invested in the fund.
- The *Vanguard Explorer Fund Investor Shares* seeks to provide long-term growth of capital by investing in a diversified group of small-company stocks with prospects for above-average growth. The value per share was \$79.47 and \$71.44 at December 31, 2012 and 2011, respectively. At December 31, 2012, 2,421 Plan participants were invested in the fund.
- The *Vanguard International Growth Fund Investor Shares* seeks to provide long-term growth of capital by investing in stocks of high-quality, seasoned companies based outside the United States. Stocks are selected from more than 15 countries. The value per share was \$19.27 and \$16.35 at December 31, 2012 and 2011, respectively. At December 31, 2012, 2,856 Plan participants were invested in the fund.
- The *Vanguard U.S. Growth Fund Investor Shares* seeks to provide long-term growth of capital by investing in large, high-quality, seasoned U.S. companies with records of exceptional growth and above-average prospects for future growth. The value per share was \$21.26 and \$18.05 at December 31, 2012 and 2011, respectively. At December 31, 2012, 2,112 Plan participants were invested in the fund.
- The *Vanguard 500 Index Fund Investor Shares* seeks to provide long-term growth of capital and income from dividends by holding each of the 500 stocks that make up the unmanaged Standard & Poor's 500 Composite Stock Price Index, a widely recognized benchmark of U.S. market performance. The value per share was \$131.37 and \$115.80 at December 31, 2012 and 2011, respectively. At December 31, 2012, 3,125 Plan participants were invested in the fund.
- The *Vanguard Wellington Fund Investor Shares* seeks to provide income and long-term growth of capital, without undue risk to capital, by investing approximately 65% of its assets in stocks and the remaining 35% in bonds. The value per share was \$33.84 and \$31.34 at December 31, 2012 and 2011, respectively. At December 31, 2012, 2,569 Plan participants were invested in the fund.
- The *Vanguard Morgan Growth Fund Investor Shares* seeks to provide long-term capital appreciation by investing in mid-sized and large companies that are expected to have above average growth in sales and profits. The value per share was \$19.90 and \$17.47 at December 31, 2012 and 2011, respectively. At December 31, 2012, 817 Plan participants were invested in the fund.
- The *Vanguard Windsor II Fund Investor Shares* seeks to provide long-term capital appreciation and income by investing mainly in mid-sized and large companies whose stocks are considered by the fund's advisor to be undervalued. The value per share was \$29.38 and \$25.78 at December 31, 2012 and 2011, respectively. At December 31, 2012, 880 Plan participants were invested in the fund.
- The *Vanguard LifeStrategy Growth Fund* seeks to provide long-term growth of capital and income by investing in four Vanguard funds: a domestic stock fund, an international stock fund, a bond fund and an asset allocation fund.

AIRGAS, INC. 401(k) PLAN

Notes to Financial Statements (continued)

The portfolio's asset allocation ranges are expected to be 80% stocks and 20% bonds. The value per share was \$23.30 and \$21.10 at December 31, 2012 and 2011, respectively. At December 31, 2012, 1,970 Plan participants were invested in the fund.

- The *Vanguard LifeStrategy Moderate Growth Fund* seeks to provide income and long-term growth of capital and income by investing in four Vanguard funds: a domestic stock fund, an international stock fund, a bond fund and an asset allocation fund. The portfolio's asset allocation ranges are expected to be 60% stocks and 40% bonds. The value per share was \$20.55 and \$19.16 at December 31, 2012 and 2011, respectively. At December 31, 2012, 1,647 Plan participants were invested in the fund.
- The *Vanguard LifeStrategy Conservative Growth Fund* seeks to provide income and moderate long-term growth of capital and income by investing in five Vanguard funds: a domestic stock fund, an international stock fund, two bond funds and an asset allocation fund. The portfolio's asset allocation ranges are expected to be 40% stocks and 60% bonds and short-term cash investments. The value per share was \$16.97 and \$16.22 at December 31, 2012 and 2011, respectively. At December 31, 2012, 8,726 Plan participants were invested in the fund.
- The *Vanguard LifeStrategy Income Fund* seeks to provide a high level of income by investing in four Vanguard funds: a stock fund, two bond funds and an asset allocation fund. The portfolio's asset allocation ranges are expected to be 20% stocks, 60% bonds and 20% short-term cash reserves. The value per share was \$14.21 and \$14.14 at December 31, 2012 and 2011, respectively. At December 31, 2012, 925 Plan participants were invested in the fund.
- The *Vanguard Total Bond Market Index Fund Investor Shares* seeks to provide a high level of interest income by attempting to match the performance of the unmanaged Barclay's Capital Aggregate Bond Index, a widely recognized measure of the entire taxable U.S. bond market. The value per share was \$11.09 and \$11.00 at December 31, 2012 and 2011, respectively. At December 31, 2012, 2,463 Plan participants were invested in the fund.
- The *Vanguard Retirement Savings Trust* seeks stability of principal and a high level of current income consistent with a two-to-three year average maturity. The Trust is a tax-exempt common collective trust invested primarily in fully-benefit responsive investment contracts issued by insurance companies and commercial banks, and similar types of fixed-principal investments. The Trust intends to maintain a constant net asset value of \$1.00 per share. The principal and interest of these contracts are not guaranteed. At December 31, 2012, 3,488 Plan participants were invested in the Trust.

(d) Notes Receivable from Participants

Notes receivable from participants represent participant loans that are measured at their unpaid principal balance plus any accrued but unpaid interest. Subsequent to a remedy period that provides for the repayment of defaulted loans, uncollectible defaulted loans are treated as taxable distributions from the Plan to the respective participants.

(e) Use of Estimates

The preparation of the financial statements in accordance with GAAP requires the Plan administrator to make estimates that affect the reported amounts of assets and liabilities and changes therein, and disclosure of contingent assets and liabilities. Actual results could differ from those estimates.

(f) Risks and Uncertainties

The Plan invests in various investment securities. Investment securities are exposed to various risks such as interest rate, market and credit risks. Due to the level of risk associated with certain investment securities, it is at least reasonably possible that changes in the values of investment securities will occur in the near term and that such changes could materially affect participants' account balances and the amounts reported in the Statement of Net Assets Available for Benefits.

(3) Investments

The following investments represent 5% or more of the Plan's net assets available for benefits:

AIRGAS, INC. 401(k) PLAN
Notes to Financial Statements (continued)

	December 31,	
	2012	2011
Airgas Common Stock Fund	\$ 133,719,005	\$ 118,924,937
Vanguard 500 Index Fund Investor Shares	51,307,561	43,332,245
Vanguard LifeStrategy Conservative Growth Fund	81,496,622	63,702,549
Vanguard Retirement Savings Trust	97,302,038 ⁽¹⁾	90,660,396 ⁽¹⁾
Vanguard Total Bond Market Index Fund Investor Shares	37,861,335	34,754,470
Vanguard Wellington Fund Investor Shares	56,279,305	49,904,732

⁽¹⁾ Stated at contract value.

The net appreciation (depreciation) in the fair value of the Plan's investments (including realized gains and losses) was as follows:

	Years Ended December 31,	
	2012	2011
Airgas Common Stock Fund	\$ 19,808,164	\$ 24,206,044
Mutual funds	31,954,595	(6,328,291)
Net appreciation in fair value of investments	<u>\$ 51,762,759</u>	<u>\$ 17,877,753</u>

Investment Contracts

Fully benefit-responsive investment contracts included within the Trust serve as an option in a carefully structured investment plan. Plan participants may ordinarily direct the withdrawal or transfer of all or a portion of their investments in the Trust at contract value. Contract value represents contributions made plus interest accrued at the contract rate, less participant withdrawals and administrative expenses.

There are no reserves against the contract value for credit risk of the contract issuer or otherwise. The average yield was 2.22% for 2012 and 3.09% for 2011. The average crediting interest rate was 2.37% for 2012 and 3.31% for 2011. The crediting interest rate is based on a formula agreed upon with the issuer, but may not be less than zero. Such interest rates are reviewed on a quarterly basis for resetting.

The existence of certain conditions can limit the Trust's ability to transact at contract value with issuers of its investment contracts. Specifically, any event outside of the normal operation of the Trust that causes a withdrawal from an investment contract may result in a negative market value adjustment with respect to the withdrawal. Examples of such events include, but are not limited to, partial or complete legal termination of the Trust or a unit holder, tax disqualification of the Trust or a unit holder, and certain Trust amendments if the issuers' consent is not obtained. As of December 31, 2012, the occurrence of an event outside of the normal operation of the Trust that would cause a withdrawal from an investment contract is not considered to be probable.

Summarized below are the carrying (contract) and fair values of the Trust, which is reflected at its carrying value in net assets available for benefits on the Plan's Statements of Net Assets Available for Benefits. The computation of the fair value of the Trust is performed by the Company (see Note 4).

	December 31, 2012		December 31, 2011	
	Carrying Value	Fair Value	Carrying Value	Fair Value
Vanguard Retirement Savings Trust	\$ 97,302,038	\$ 102,460,134	\$ 90,660,396	\$ 95,062,391

(4) Fair Value Measurements

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Assets and liabilities recorded at fair value are classified based upon the level of judgment associated with the inputs used to measure their fair value. The hierarchical levels related to the subjectivity of the valuation inputs are defined as follows:

AIRGAS, INC. 401(k) PLAN

Notes to Financial Statements (continued)

- Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities at the measurement date.
- Level 2 inputs are inputs other than quoted prices included within Level 1 that are observable, either directly or indirectly, through corroboration with observable market data at the measurement date.
- Level 3 inputs are unobservable inputs that reflect management's best estimate of the assumptions (including assumptions about risk) that market participants would use in pricing the asset or liability at the measurement date.

The following is a description of the valuation methodologies used for assets measured at fair value:

- *Airgas Common Stock Fund*: Valued based on the combined quoted market prices in active markets of the underlying shares of Airgas common stock and a money market component.
- *Mutual funds*: Valued at the net asset value of shares held by the Plan.
- *Vanguard Retirement Savings Trust*: Valued, as reflected in the Plan's investments at fair value on the Statements of Net Assets Available for Benefits at December 31, 2012 and 2011, based on the expected future cash flows for each contract discounted to present value using observable market data as inputs, and the aggregate observable market values of the underlying investments in mutual funds, bond trusts and other investments.

The Plan's assets measured at fair value on a recurring basis at December 31, 2012 and 2011 are categorized in the table below based on the lowest level of significant input to the valuation:

	Balance at	Quoted prices in	Significant other	Significant
	December 31, 2012	active markets	observable inputs	unobservable inputs
		Level 1	Level 2	Level 3
Airgas Common Stock Fund	\$ 133,719,005	\$ 133,719,005	\$ —	\$ —
<i>Mutual funds</i>				
Equity	159,611,180	159,611,180	—	—
Balanced	204,378,270	204,378,270	—	—
Bond	37,861,335	37,861,335	—	—
Money Market	81,598	81,598	—	—
Vanguard Retirement Savings Trust	102,460,134	—	102,460,134	—
Total investments at fair value	\$ 638,111,522	\$ 535,651,388	\$ 102,460,134	\$ —

	Balance at	Quoted prices in	Significant other	Significant
	December 31, 2011	active markets	observable inputs	unobservable inputs
		Level 1	Level 2	Level 3
Airgas Common Stock Fund	\$ 118,924,937	\$ 118,924,937	\$ —	\$ —
<i>Mutual funds</i>				
Equity	135,719,629	135,719,629	—	—
Balanced	172,302,059	172,302,059	—	—
Bond	34,754,470	34,754,470	—	—
Money Market	82,411	82,411	—	—
Vanguard Retirement Savings Trust	95,062,391	—	95,062,391	—
Total investments at fair value	\$ 556,845,897	\$ 461,783,506	\$ 95,062,391	\$ —

The methods described above may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. Furthermore, while Plan management believes its valuation methods are appropriate and

AIRGAS, INC. 401(k) PLAN

Notes to Financial Statements (continued)

consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different fair value measurement at the reporting date.

(5) Tax Status

The Plan administrator has received a determination letter from the IRS dated May 21, 2012, stating that the Plan is qualified under IRC Section 401.

GAAP requires the Plan administrator to evaluate tax positions taken by the Plan and recognize a tax liability (or asset) if the Plan has taken an uncertain position that more likely than not would not be sustained upon examination by the IRS. The Plan administrator has analyzed the tax positions taken by the Plan, and has concluded that as of December 31, 2012, there are no uncertain positions taken or expected to be taken that would require recognition of a liability (or asset) or disclosure in the financial statements. The Plan is subject to routine audits by taxing jurisdictions; however, there are currently no audits for any tax periods in progress. The Plan administrator believes it is no longer subject to income tax examinations for years prior to 2010.

The Plan administrator believes that the Plan is designed and is currently being operated in compliance with the applicable requirements of the IRC.

(6) Related Party Transactions

The Plan investments are managed by an affiliate of Vanguard Fiduciary Trust Company (the Plan trustee). The Airgas Common Stock Fund invests in common stock of the Company. Investment transactions of the Plan, therefore, qualify as party-in-interest transactions, but are not prohibited transactions.

(7) Plan Termination

Although it has not expressed any intent to do so, the Company has the right under the Plan to discontinue its contributions at any time and to terminate the Plan subject to the provisions of ERISA. Upon termination of the Plan, participants would remain fully vested in all amounts credited to their accounts under the Plan.

(8) Transfers from Other Plans and Other Additions

Transfers from other plans and other additions primarily reflects the assumption by the Plan of entire benefit plans of certain companies acquired by Airgas.

(9) Differences between Financial Statements and Form 5500

The following is a reconciliation of net assets available for benefits per the financial statements to the Plan's Form 5500:

	December 31,	
	2012	2011
Net assets available for benefits per the financial statements	\$ 654,657,964	\$ 574,239,540
Deemed distributions of participant loans	(70,241)	(96,339)
Adjustment from contract value to fair value for fully benefit-responsive investment contracts	5,158,096	4,401,995
Net assets available for benefits per Form 5500	<u>\$ 659,745,819</u>	<u>\$ 578,545,196</u>

The following is a reconciliation of net additions per the financial statements to the Plan's Form 5500:

AIRGAS, INC. 401(k) PLAN
Notes to Financial Statements (continued)

	Years Ended December 31,	
	2012	2011
Net additions per the financial statements	\$ 80,418,424	\$ 43,919,588
Change in deemed distributions of participant loans	26,098	21,286
Change in adjustment from contract value to fair value for fully benefit-responsive investment contracts	756,101	933,505
Net income per Form 5500	<u>\$ 81,200,623</u>	<u>\$ 44,874,379</u>

AIRGAS, INC. 401(k) PLAN
Schedule H, Line 4i - Schedule of Assets (Held at End of Year)
December 31, 2012

Identity of Issue	Description of Investment	Current Value
* Airgas Common Stock Fund	Company Stock Fund	\$ 133,719,005
* Vanguard 500 Index Fund Investor Shares	Registered Investment Company	51,307,561
* Vanguard Explorer Fund Investor Shares	Registered Investment Company	28,886,481
* Vanguard International Growth Fund Investor Shares	Registered Investment Company	29,767,491
* Vanguard LifeStrategy Conservative Growth Fund	Registered Investment Company	81,496,622
* Vanguard LifeStrategy Growth Fund	Registered Investment Company	30,342,103
* Vanguard LifeStrategy Income Fund	Registered Investment Company	9,881,444
* Vanguard LifeStrategy Moderate Growth Fund	Registered Investment Company	26,378,796
* Vanguard Morgan Growth Fund Investor Shares	Registered Investment Company	7,531,807
* Vanguard Total Bond Market Index Fund Investor Shares	Registered Investment Company	37,861,335
* Vanguard U.S. Growth Fund Investor Shares	Registered Investment Company	31,469,909
* Vanguard Wellington Fund Investor Shares	Registered Investment Company	56,279,305
* Vanguard Windsor II Fund Investor Shares	Registered Investment Company	10,647,931
* Vanguard Prime Money Market Fund	Registered Investment Company	81,598
* Vanguard Retirement Savings Trust	Common Collective Trust	102,460,134
* Notes Receivable from Participants	Interest ranging from 3.25% to 11.00%, maturing through December 2042	20,706,261
Total		\$ 658,817,783

* Party-in-interest

See accompanying Report of Independent Registered Public Accounting Firm.

Signatures

Pursuant to the requirements of the Securities Exchange Act of 1934, the Plan Administrator has duly caused this annual report to be signed on its behalf by the undersigned hereunto duly authorized.

AIRGAS, INC. 401(k) PLAN
(Name of Plan)

BY: /s/ Robert M. McLaughlin
Robert M. McLaughlin
Senior Vice President and Chief Financial Officer
Airgas, Inc.

BY: /s/ Dwight T. Wilson
Dwight T. Wilson
Senior Vice President - Human Resources
Airgas, Inc.

DATED: June 27, 2013

Exhibit Index

Exhibit

23 Consent of Independent Registered Public Accounting Firm