

Providing preferred products

Middlesex Gases invests in a new specialty gas lab

By Agnes H. Baker

Middlesex Gases, with headquarters in Everett, Massachusetts, supplies medical, biotechnology and life science companies throughout New England with specialty gases and customized solutions. Serving this unique and fast growing market requires constant attention and Middlesex Gases is continually

developing ways to meet the ever evolving demands of its specialty gas customers. Toward that end, the company opened a new state-of-the-art specialty gas laboratory at its Everett facility in January.

A fully automated plant

At Middlesex's new state-of-the-art laboratory, it produces high purity,

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ultra high purity, and research grade gases, as well as over 50 custom gas blends. Middlesex CEO Bo Martin said, "Our specialty gas customers



are important to us and we have invested over one million dollars in a new fully automated plant so we can continue to guarantee precise and accurate results every time we fill a cylinder or tank."

"As we are a preferred supplier of specialty gases and equipment for the Massachusetts Biotechnology Council (MassBIO), the Massachusetts Medical Device Industry Council (MassMEDIC), and BioCT, Connecticut's biotechnology community, this lab is central to our Life Sciences business," explained Ron Perry, Director of Sales and Marketing.

The new Middlesex specialty gas lab is capable of Automatic and Gravimetric filling of both non-flammable and flammable gas mixtures. While the gases and mixtures produced have not changed, the lab's new technology enables the company to deliver product faster and at extremely high tolerance levels.

Shane Poole, Manager of Bulk Fleet & Filling Operations for Middlesex, said, "The tolerances for specialty gases are extremely tight, which is why we had to fill them one at a time in our old lab. We had to analyze each cylinder on a scale because accuracy to the gram is required. A half of gram can throw the mixture off. How small is that? As reference, there are 450 grams in a pound. With the new lab's automated system, we are able to control the flow rate of the gases going into the cylinders. We can put in our first mixture, let

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© Weldcoa | Middlesex invested over \$1 million in its new automated specialty gas plant

it equalize, verify the weight, and if needed, add product to adjust the weight. With our previous pump system we could not do this."

Martin added, "This process allows us to fill more cylinders, faster, which is one of the lab's biggest advantages. We've gone from filling cylinders one at a time to filling seven at a time. The automation of the system also allows the filling to be done overnight or on a weekend. In a market like Life Sciences, where customers require fast delivery, this is huge advantage for our business."

Added capacity

The new lab is 280 sq. ft. larger than the old plant and has an additional 2,100 sq. ft. of filling area. This adds a third to Middlesex's specialty gas production capacity. It also more than doubles its analytical capability. "One of our biggest holding points for getting product out the door was our ability to analyze the gases," said Poole. "In the old lab we only had one GC (gas chromatogram) and it tested one tank at a time. Now we have an additional GC and it can run multiple tests at a time. This added equipment triples our analytical capacity."

Despite these dramatic increases in size and production capacity, the



© Weldcoa | The new manifolded fill system automatically vents, vacuums and fills tanks

automation of the new lab allows the company to operate without additional staff. "Once the tanks are hooked up to the manifold and the fill program is set, the system automatically does the rest – it vents the tanks, vacuums the tanks, and then fills them to the proper tolerance," Poole said. "This is a big time saver for our personnel."

Driving demand

A combination of factors drives demand for Middlesex Gases' specialty gas products. "The Life →

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→ Science market continues to expand at a rapid pace,” says Ron. “This past year, with COVID, our Life Science sales obtained double digit growth. Right now our fastest growth market, after Bulk and MicroBulk, is our Liquid Cylinder business. We have aligned ourselves to be strategic partners with various consortium

markets in New England. This has impacted our growth substantially over the past few years.”

Liquid Nitrogen (LIN) is a big part of Middlesex’s Life Sciences business and the company has been steadily investing in new equipment and technology to support that segment.

“We invested over a million dollars in purchasing new liquids cylinders for our customers last year,” Perry said. “In fact, this has been the trend for the past several years. The high demand for liquid tanks presents a challenge in both filling and delivering. The recent build-out of

our new automated specialty gas lab opened up more area for our liquid filling operation. It gives us the additional space needed to meet the high demand for liquids from our customer base. On the distribution end, we have moved from 10-wheel box trucks to trailers.”

Medical CO₂

In addition to liquid nitrogen, Middlesex Gases sees Medical CO₂ as a fast growing product in the life sciences market where it is used primarily for incubator applications. The company has been outsourcing

Middlesex Gases redesigns its website

Middlesex Gases is an elite supplier to New England’s exploding Biotech and Life Sciences businesses. To better reflect its role in delivering gases and equipment to this emerging sector, the company introduced *middlesexgases.com*, a completely redesigned website.

Gasworld spoke with Ron Perry, Director of Sales and Marketing for Middlesex, about this initiative.

What prompted the redesign of your website?

Ron Perry (RP): Our new website is part of Middlesex’s overall strategy to reinforce our position as a leading supplier to the Life Sciences community. Last fall we refreshed our business cards and logo. We shortened our name on the card from ‘Middlesex Gases and Technologies’ to ‘Middlesex Gases’ and included the image of a DNA strand to emphasize our connection to the Life Sciences group. Next, we redesigned our company’s print brochure and used that as a template for our refreshed website.

What significant changes have you made?

RP: Our focus for this project was making the website visually stronger and we hired

a photographer and graphic designer to accomplish this. We expanded the visitor’s view of our bulk and micro bulk capabilities and added a more complete picture of our dry ice and medical divisions. By including the use of movement and color in our graphics, we created a site that keeps visitors engaged.

How do those changes help your customers?

RP: They say a picture is worth a thousand words. By introducing strong visuals, we enable the viewer to get an immediate picture of the depth of our commitment to the market place. At a glance, a visitor to the new site can see that Middlesex has an impressive fleet of cylinder trucks and bulk trailers, a large inventory of high pressure and liquid cylinders, bulk and micro-bulk capabilities, and a state-of-the-art specialty gas plant.

Do these changes make your operations more efficient?

RP: I would say the changes illustrate the greater efficiency of our operations. For example, the recent buildout for our new specialty gas lab will drastically impact our ability to deliver products to our customers faster.

Has the pandemic impacted the use of your website?

RP: Yes, like so many businesses we turned to online communications when our regular sales and marketing channels were shut down. For example, the lockdown last Spring prevented us from entering many customer locations, which led us to change the way we both contacted customers and got the appropriate product information to them. One of the important things we did was create a new comprehensive product and services brochure and put that information up on the redesigned website. That worked. Data shows that activity on our website is up and our e-commerce site continues to add customers each week.

What’s the main thing you want your audience to know about the new website?

RP: The times are challenging, but at Middlesex we continue to invest in customer support. We want our audience to know that the redesigned website reflects our team’s commitment to providing customers with superior products and services. That’s the key takeaway.

this product. With Middlesex's new spec gas lab up and running, the company now will begin to build out its own Medical CO₂ capacity.

"In the first quarter of 2021 we will begin to bring medical CO₂ filling in house," Perry said. "We have already ordered two tanks – a 30-ton and a 14-ton. Our goal is to be up and running by mid-summer for filling cylinders and liquids with medical CO₂. Once we are operational, we will order a 14-ton bulk truck to accommodate delivery to our medical CO₂ customers. We anticipate our growth in this market will be in-line with our current liquid nitrogen business."

Tom Martin, Middlesex President, sums up how this million dollar investment fits into the company's overall business strategy: "These



improvements on the operational side will increase our overall efficiency, which will have a positive impact for our customer needs. As New England's elite gas supplier,

service is our advantage and our new specialty gas lab brings Middlesex's ability to serve its customers to the highest level – that's something of which we are very proud." 