During the wine making process it is critical that wine be protected from contact with oxygen. The presence of oxygen promotes the growth of yeast and aerobic bacteria, which can cause spoilage and alter final product aroma, color, and taste. Nitrogen minimizes the levels of oxygen present, preserving flavors and significantly improving shelf life. It is an essential tool in helping to alleviate the issues caused by the presence of oxygen, and has become the preferred technology because it is economical and inert. Nitrogen, unlike Argon, can provide a continuous bleed to blanket storage tanks. A nitrogen generator, which separates nitrogen and oxygen from a compressed air supply, can often be the most cost economical way to supply this nitrogen.

**Features and Benefits:**

- Price of our nitrogen is constant. Delivered nitrogen is subject to pricing increases, rental agreements, hazmat fees, delivery surcharges, local and state taxes, etc. A nitrogen generator offers long term price stability.
- Grow without added expenses. Adding more hours of production does not increase the size of your nitrogen generator.
- Replace intermittent Argon blanketing with continuous nitrogen purging.
- Nitrogen has a very low boiling point, and is continuously evaporating when supplied as liquid in bulk or dewars. It can cost thousands of dollars if these gases are not captured.
- A nitrogen generator eliminates the contracts required from bulk gas suppliers. No more automatic renewals, automatic increases or 1-year written notice for contract termination.
- Ease of installation - pipe in compressed air and pipe out Nitrogen. Contrast this with the installation requirements for a bulk tank, including a concrete pad, fence, permit fees, and significant square footage.
- Complete start up and testing procedure at the factory prior to delivery.
- Very little maintenance or monitoring required once system is up and running. Simple and straightforward operation.
- Proven technology with numerous references available. Over 50,000 successful generator installations worldwide.
Application:

There are numerous points in the production process where wine has the opportunity to come in contact with oxygen and cause product quality issues, including storage, transport and sparging. A nitrogen blanket, reducing the oxygen concentration as low as 0.5%, minimizes contact between oxygen and the wine surface during storage (both pre and post bottling). This will prevent the growth of bacteria yeast and other microbes.

Nitrogen can also be used to purge air from pipes and hoses prior to bottling and to ensure oxygen is not introduced during transport. Finally, sparging with nitrogen will remove any oxygen or CO2 introduced during handling helping to preserve wine flavor, color, and aroma. If nitrogen is not used during these processes, the wine is exposed to oxygen and the level of dissolved oxygen [DO] increases. Using an inert gas helps to ensure minimal DO pickup.

Case Study:

Groth Vineyards is a Cabernet Sauvignon and Sauvignon Blanc producer in Napa Valley uses nitrogen to rack wines, sparge tanks, and assist in the bottling process. Nitrogen is used throughout their process to ensure product quality. Nitrogen was originally supplied by a local gas company delivered in cylinders and dewars. Fluctuations in usage requirements would frequently cause the winery to run out of nitrogen. This created not only an inconvenience, but also an economic concern as production had to be suspended until more nitrogen could be delivered. Parker Hannifin was selected to supply a gas generator that would provide a continuous nitrogen stream for each of their processes. Ease of operation, minimal maintenance requirements and return on investment [ROI] were important factors in their decision. Parker Hannifin gas generators are designed for trouble free operation, 24 hrs/day, 365 days/year. Installation was simple, as compressed air was piped in and the generator was connected to their existing nitrogen piping. The annual maintenance requirements were straightforward and inexpensive.

Overall, the cost savings were impressive, initially yielding in a 14 month payback and ultimately providing price stability for the future. The winery has had no issues with spoilage or DO pickup, and solved their nitrogen delivery issues. Groth Vineyards recommends a Parker Hannifin nitrogen generator for improved efficiencies, ease of use and its trouble free operation.

Specifications

Nitrogen Generator Flow Rates (SCFH)

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