

Inventory Management For You: Barcode Tracking vs. Alternatives

Tracking product inventory can be a tedious and complicated process to maintain, especially as a company grows.

While larger businesses are the most common users of barcode tracking, smaller companies can also benefit. In addition to tracking cylinder inventory and providing timely and accurate product information, a barcode system can store necessary data, including project cost centers, grant codes, purchase orders and more.

For gas storage and usage, compliance with government and federal regulations is also an important consideration. This includes monitoring gas shelf lives to avoid expiration and noncompliance, further ensuring you have the right gas when and where you need it. Having an organized inventory structure can limit cylinder storage excess due to product duplication or help to prevent product runouts.

We reached out to Bob Miller, Solutions Architect at Airgas, an Air Liquide company, to get his take on some of the other tools on the market to enhance tracking efficiencies.

What are some of the options on the market for tracking cylinders besides barcodes?

RFID (radio-frequency identification) technologies are another option in the marketplace. Much like barcodes, these provide a means of identifying an individual cylinder; however, there are two main differences between RFID and barcodes, including:

- **Cost:** RFID is considerably more expensive to implement than barcoding. “The extra expenses for scanning hardware can depend on the type of tag technology used and the scan distance requirements,” adds Miller.
- **Labor:** Barcode scanning requires more human labor as each item needs to be scanned separately, while RFID software can read up to hundreds of tags per second via radio signals.

Which types of RFID tags are used most frequently?

There are two distinct types of RFID tags: passive and active. They differ in a few ways:

Passive Tags

- Have a range of up to 25 feet under ideal conditions.
- Do not have a power source and can only transmit their signal once the RF energy emitted is received from a reader in its proximity.

Active Tags

- Have a greater signal range but are much more expensive due to additional features, including:
 - On-board sensors for tracking environmental parameters
 - Protective shell to weather extreme temperatures and moisture
- Battery-powered and have the ability to automatically broadcast their signal.
- Require periodic replacement of batteries, which is often not suitable for items that may be in circulation longer than the battery life.

What are some of the advantages and disadvantages of RFID technology?

RFID users most often implement RFID for semi-automated and automated process to prevent errors and enhance timing. “RFID is better suited for harsh environments where barcodes could be covered, damaged or destroyed,” Miller emphasizes.

When used by itself for simple identification, RFID does not offer many benefits when compared to conventional barcoding.

Are there any other viable options to replace barcoding?

Customer tags are another potential tracking solution. These tags enable the customer to use a centralized receiving/warehousing function. When a facility uses these tags, each cylinder has an identifying neck ring tag attached. This helps the customer's receiving department route the cylinder to the correct end user within its facility.


What are the steps necessary to evaluate inventory management needs?

Inventory tracking can be an incredibly helpful tool and provide critical insights to improve inventory management. Along with this wealth of information, tracking systems can save you time compared to manual record keeping. If you find barcodes are not working for you as efficiently as they should for your needs, you should consider looking into the other options available on the market.

Miller stresses that preparation is the key to addressing supply chain challenges. "Have a list of inventory management challenges your company is experiencing."

These challenges can include lost cylinders, running out of test mixtures and overstocking of cylinders. The challenges can result in a less efficient work process. For example, efficiency becomes compromised when workers pull more easily accessible cylinders rather than First In First Out (FIFO). And without proper tracking, facilities also face challenges like poor cost allocation, lack of data and trouble finding a product by location.

Once you identify your challenges, your vendor should be able to help select the right technology for your operation and provide solutions using the most cost-effective tools to meet your requirements as well as fit your needs now and in the future.



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