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Covid 19: Dry ice set for spike in demand

By [Nick Parkinson](#) | 11 November 2020

Dry ice producers, distributors and equipment makers are bracing themselves for a spike in demand next year, with concerns there will be a tightening in the availability of dry ice for storage and distribution of coronavirus (Covid-19) vaccines.

After a vaccine is declared ready, then comes the challenge of delivering millions of doses at ultra-cold temperatures with the help of dry ice – solid form of carbon dioxide (CO₂) – and cryogenic freezers which use liquid nitrogen.



Source: Cee Kay Supply

Vaccines will need to be kept at temperatures as low as minus 70 or 80 degrees Celsius (minus 94 or 112 degrees Fahrenheit), and they may have to be shipped from one continent to another.

During their journey from pharmaceutical companies to hospitals and vaccination centres, the vaccines will be packed into containers of dry ice then loaded on to planes and trucks.

Huge orders are expected from transportation and logistics companies which will distribute vaccines in 2021. But after CO₂ shortages across the US this year, many in the industry are asking: will we have enough dry ice?

Sam Rushing, President of Advanced Cryogenics and CO₂ expert, told **gasworld**, "Due to an increased demand for dry ice for shipment of food products, among other refrigerated items, particularly when adding to demands surrounding the pandemic, it is feared there will be a shortage of dry ice. Dry ice shortages are due to the liquid CO₂ shortfall, largely driven by the drop in ethanol and reformer by-product of CO₂ raw gas. A major independent stated that there are shortages of liquid and dry ice, again due to the effects of the pandemic. I am certain there will be a spike in demands for dry ice when vaccines are being shipped and where persistent liquid and dry ice shortages already exist."

Dry ice is already in high demand in certain geographical areas in the US, with pharmaceutical firms requiring product as they research and test the coronavirus vaccine.

Rushing added, "Various companies, particularly distributors in some markets, such as in New England, say shortages of dry ice are acute. One such company indicated upon receipt of an order of dry ice from the supplier, their inventory disappears in three hours. It is certainly acute, on the supply side."

But the Compressed Gas Association (CGA), whose members produce dry ice in North America, expects sufficient dry ice supply for the US and Canada.

"According to CGA members, the current production capacity for carbon dioxide and dry ice is expected to be sufficient to meet anticipated demand from vaccine manufacturers," CGA said in a post on its website.

"There is also potential capacity to increase production and distribution of dry ice for Covid-19 vaccines, if needed. CGA members report that the carbon dioxide production capacity in the US and Canada is 30,000 to 35,000 tonnes per day."

The CGA added, "The key to maintaining dry ice supplies lies in vaccine manufacturers working closely with dry ice and carbon dioxide producers and distributors, as well as dry ice equipment manufacturers, to configure appropriate onsite storage and delivery capacities, in anticipation of growing demand."

Dry ice companies are preparing for a busy 2021 by increasing liquid carbon dioxide storage, production equipment as well as shipping container inventory. But there are concerns about meeting demand.

Buddy Collen, General Manager at Reliant and Pacific Dry Ice, which serves dry ice customers in the Eastern, South Western and West Coast states, told **gasworld**, “We are in scramble mode trying to manipulate our production plants in order to be able to produce the maximum output possible. This emphasis isn’t due to the vaccine but the general supply/demand imbalance occurring today. Vaccine shipment simply adds to the imbalance. It’s not only a dry ice shortage but also a liquid CO₂ shortage. So, supply is affected by several bottleneck issues. The first bottleneck is liquid CO₂ supply... which is crippled due to raw gas supply shutdowns occurring due to the shutdown of the economy.”

Brad Dunn, Vice-President at Cee Kay Supply, a St Louis, Missouri-based supplier of dry ice, told **gasworld**, “There is a significant increase in dry ice demand during the holiday season related to e-commerce gifting and frozen shipping. If the release of the vaccine during this period occurs, it would certainly cause some supply constraints. Dependent on where the immediate need for dry ice is needed additional liquid CO₂ volume may need to be transported further distances in order to meet the required demand.”

ASCO Carbon Dioxide Ltd provides the market with solutions for dry ice production such as pelletizers and Fabian Weber, Director Sales & Marketing, says there is already an increased demand in dry ice.

“We are getting a lot of inquiries for dry ice production solutions by pharmaceutical firms. But also logistic companies, who are expecting to get an order for delivering the coronavirus vaccine, are reaching out,” Weber told **gasworld**.

“The challenge is that they need huge amounts of dry ice in a very short timeframe. Due to that fact we are of course able to provide pelletizers with different productions capacities, dry ice containers and liquid CO₂ tanks, but well-coordinated dry ice production centers with integrated packing solutions is almost impossible in that short amount of time. Because of that, effects of automation we normally would like to offer, get lost and manual work is necessary.”

Weber added, “We definitely expect an increased demand for dry ice in the future.”

Aquila Triventek also produces pelletizers and other solutions for dry ice production. Sales Director Jesper Holmgaard said, “We expect further increase in demand for dry ice related to Covid 19. The demand comes from pharma industries, hospitals, laboratories and home delivery services. Triventek has sold several of our containerised ‘plug & play’ solutions for dry ice production to various industries like gas companies, home delivery and pharma industries. It gives them the benefit of flexibility to set up dry ice production more locally within a few hours.”

*The full article will appear in the December issue of **gasworld** US, along with a report on cryogenic containers and the coronavirus vaccine.*