

## Asia-Pacific

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WITH...

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# Coronavirus vaccines & dry ice

in the APAC Region

**Chris Dolman**  
BOC South Pacific



Distributing coronavirus vaccines in the APAC Region: 10 minutes with Chris Dolman, BOC South Pacific

By Stephen B. Harrison on Jan 18, 2021 | [\[AI\] Translate](#) ▼

Medical oxygen has been a life saver for many patients suffering from Covid-19. Now that Coronavirus (Covid-19) vaccines have been developed, the role of industrial gases will broaden because dry ice is ideal to support distribute those vaccines.

In the Asia-Pacific (APAC) region, BOC South Pacific is ready to support the next wave in the battle against Covid-19. Chris Dolman, Business Manager for Specialised Markets, took 10 minutes to talk exclusively to **gasworld** about how BOC is making the required preparations.

### Chris, which Covid-19 vaccines are being discussed for use in Australia?

Australia invested in several potential vaccine candidates originating overseas, as well as made in Australia, but unfortunately were found not to be suitable. So, we are likely to use vaccines developed overseas based

availability, and local approvals.

The Pfizer-BioNTech vaccine is the likely to be the first one that is approved by the Australian TGA – the T Administration.



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### **Which vaccines need dry ice for storage and transport?**

The Pfizer-BioNTech vaccine is required to be shipped and stored meaning it will likely require dry ice as part of the supply chain. Many factors need dry ice or other cold supply chain solutions. Many factors in the supply chain are yet to be determined as vaccines are reviewed and approved.

### **How cold is dry ice?**

The temperature of dry ice is -78.5 °C. This is very similar to low-temperature mechanical freezer units used in the biotech and healthcare sectors.



### **How cold does the vaccine need to be?**

While we are not vaccine experts, we have been informed that the Pfizer vaccine needs to be kept at dry ice temperatures to extend its life. But it goes without saying that for each vaccine, the manufacturer's instructions must be followed.

### **Is dry ice used for storage of the vaccines in hospitals and warehouses?**

This is yet to be fully determined in Australia.

There are likely to be a number of applications requiring dry ice, including shipping from manufacturing sites to the airport, shipping from hubs in Australia to vaccination sites by road and potentially short-term storage at vaccination sites. Static storage can also be achieved using specialised low-temperature mechanical freezers where available. The final storage solution will depend on the final roll-out strategies and nominated vaccination locations.

### **Where do you source carbon dioxide (CO<sub>2</sub>) for dry ice production?**

BOC South Pacific manufactures CO<sub>2</sub> in several states in Australia. We also produce CO<sub>2</sub> in New Zealand.

### **How and where do you convert CO<sub>2</sub> to dry ice?**

We have invested in both metro and regional dry ice production and storage capabilities, allowing us to service all major movements throughout Australia and New Zealand.

### **What is the anticipated demand of dry ice for the vaccine application in South Pacific?**

CO<sub>2</sub> supply can be tight around the summer peak season, driven by the food and beverage sectors. But in the summer season the supply situation can be influenced by maintenance shutdowns of our feed gas supplier plant.

Early engagement in the vaccine roll-out planning with the relevant health authority is already underway to match the upcoming demand profile. This will support BOC to ensure sufficient supplies of CO<sub>2</sub> and subsequently to ensure the availability of dry ice when called upon.

### **Will you use dry ice slabs or pellets for this application?**

The indication is that pellets work best. But we are flexible, and BOC South Pacific can offer the full range of solutions including onsite production, which we have previously implemented at several of our cold chain partners.



Dry ice can be used to keep vaccines frozen during air transportation

### **Can liquid CO<sub>2</sub> and a 'snow maker' be used as an alternative to dry ice?**

Dry ice pellets or slabs will be longer lasting than CO<sub>2</sub> snow. That is because dry ice is denser and holds its temperature for longer. That will be essential to support the frozen vaccine in the hot Australian environment. This is because vaccine roll-out is planned for the late summer and early autumn where temperatures can be over 30°C.

### **How will the vaccines get to Australia? Is dry ice required on aeroplanes?**

In the long-term, it is likely that vaccines will be produced in Australia under license. However, the first batches will arrive by plane. That is better than sea-freight, due to the limited shelf life of the vaccine.

The supply chain will be managed by expert parties who have extensive experience moving vaccines and pharmaceuticals around the world. We look forward to supporting them with the industrial gases and products that they need for operation.