PRODUCT INFORMATION

Ultra-Cold Chain Storage Solutions for COVID-19 Vaccines

Some COVID-19 vaccines require ultra-cold chain (UCC) storage through the supply chain, yet many countries currently lack enough UCC capacity to meet anticipated needs for COVID-19 vaccine campaigns. Below are three options to increase UCC capacity. Page 2 includes side-by-side descriptions of key information.

Arktek Portable Passive Storage: Arktek's Deep Freeze Dry Storage Device and Deep Freeze PCM Vaccine Storage Device are super-insulated containers that store vaccines between -60˚C to -80˚C for 6.5 days or longer under 43˚C hot zone conditions. These devices require no external power and may be used continually with dry ice/PCM replacement. Users load vaccines into vaccine carrier cups in the center and ice blocks into the inner wall through the opening at the top. Temperature sensors and onboard electronics alert users to temperature excursions.

Website: http://arktek.org/products-4.html

Stirling Portable Freezers: Stirling's ULT25NEU portable, ultra-low temperature freezer can be used to bring vaccines to remote sites at a temperature range of -20˚C to -86˚C. It plugs into any 110-240V outlet, vehicle-based 12V DC power, or external battery and uses less than 2.8 kWh/day at -80 Celsius. The freezer is available with optional SenseAnywhere technology, which combines wireless sensors and secure cloud storage to remotely monitor and track temperatures.

Website: https://us.vwr.com/store/product/12077662/portable-deployable-ultra-low-temperature-freezer-model-ult25neu-stirling-ultracold

Vaccine Pods Portable Power Solutions: The Smart Battery Vaccine Pod and smaller Rapid Intervention Smart Battery Model provide off-grid power solutions with integrated Stirling ultra-low temperature freezers, capable of maintaining -80˚C. With internal battery power and optional solar, wind, and/or DC generator, the Pod is customizable to meet local needs. In combination, the products support a hub-and-spoke vaccine distribution model. The Pods provide continuous monitoring of the location, remote access permissions and security, and power system performance and status.

Website: https://vaccinepods.com/

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August 2021

Product information provided by each manufacturer

	Arktek Portable Passive Storage	Stirling Portable Freezers	Vaccine Pods Portable Freezers
Temperature range	-60˚C to -80˚C-60 for 6.5 days and longer	-20˚C to -80˚C	-80˚C
Volume	10 L (3,750 doses) 5L (2,250 doses)	25 L (7,000 doses)	750L (300,000 doses) 25L (7,000 doses)
Power source	None	Mains, vehicle-based 12V DC power, or 12V battery	Internal batteries with wind, solar, DC generator as optional to create redundancy
Data monitoring	Comes with temperature datalogger	Available with SenseAnywhere temperature tracking	Continuous monitoring
Available options	PCM or dry ice	With or without temperature monitoring	Power sources—wind, solar, DC generator, batteries—customizable to need.
Illustrative List Price	$4,000 (PCM) $3,500 (dry ice)	$6,700 Possibly $5,500 for large orders	Basic price Vaccine Pod $100,000; Rapid Intervention model $16,000
Manufacturing capacity	600 per month	250 per month	20 in 6 months, made to order
Lead time estimate	35 days	50 in 3 days 200 in 2-3 weeks	3-4 months
Source	China	Ohio or Netherlands	Missouri