

COVID-19 Vaccine Development is Evolving

## PHCbi Has The Cold Chain Storage You Need



New vaccines are emerging in response to the COVID-19 pandemic. Early evidence suggests novel vaccine storage temperatures may require a wider range of the cold chain spectrum. Some vaccines may require multiple temperature storage points prior to administration. Are you prepared for emerging COVID-19 vaccine storage? PHCbi brand products can help.<sup>i</sup>

*PHCbi Pharmaceutical  
Refrigerators and Freezers*

PHCbi brand pharmaceutical refrigerators and biomedical freezers offer a comprehensive selection of storage solutions for high-value vaccines and other biologics. These cabinets are based on high performance refrigeration platforms engineered for reliability, temperature uniformity, fast temperature recovery and tolerance for real-world conditions.

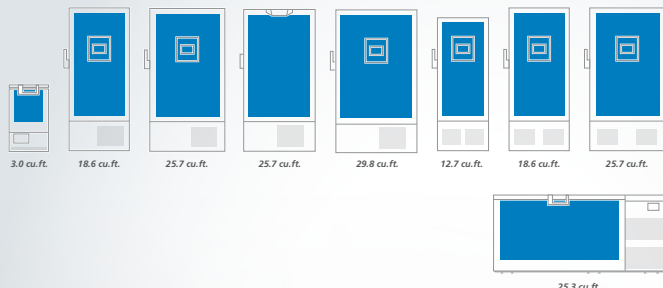
Learn more at [www.phchd.com/us/biomedical/vaccine-storage](http://www.phchd.com/us/biomedical/vaccine-storage)

<sup>i</sup> Proposed vaccine storage temperatures are based on initial data from various sources in the public domain at time of publication. Actual storage temperatures will be approved by the FDA and regulated by the CDC. Government agencies and individual vaccine manufacturers will mandate required product storage temperatures.

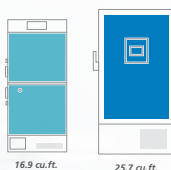
## Vaccine Storage Begins with Proper Product Selection

PHCbi pharmaceutical refrigerators and freezers satisfy any storage protocol or space requirement. Robust refrigeration systems and cabinet designs assure temperature uniformity, reliability and energy efficiency. All are engineered to maintain required temperatures for product viability and to achieve rapid temperature recovery after multiple door openings.

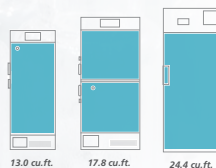
### Ultra-Low Freezers



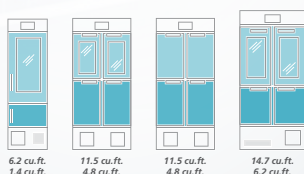
### Biomedical Freezers, -40°C



### Biomedical Freezers, -20°C



### Biomedical Refrigerator / Freezer Combo



### Pharmaceutical Refrigerators



Specifications are subject to change without notice.  
For latest specification information contact PHC Corporation of North America at [info@us.phchd.com](mailto:info@us.phchd.com).

# The Cold Chain Spectrum

## -60°C to -80°C Emerging Vaccine Types for COVID-19

For storage of mRNA, viral vector and non-replicating viral vector vaccines, as well as specimens.

- MDF-C8V1-PA
- MDF-DU502VH-PA
- MDF-DU502VHA-PA
- MDF-DU702VH-PA
- MDF-DU702VHA-PA
- MDF-U76VA-PA
- MDF-U76VC-PA
- MDF-DU901VHA-PA
- MDF-DU302VX-PA
- MDF-DU502VXC-PA
- MDF-DU702VXC-PA
- MDF-DC700VXC-PA

## -40°C Vaccine Development Processes

Required for vaccine raw material storage and some pharmaceuticals.

- MDF-MU549DHL-PA
- MDF-DU702VH-PA, -40° to -80°

## -20°C Emerging Vaccine Types for COVID-19

May be required for some emerging mRNA vaccines.

- MDF-MU339HL-PA
- MDF-MU539HL-PA
- MDF-U731-PA
- MDF-U731M-PA

## +2°C to +8°C and -20°C Storage for multiple vaccine types

Both refrigeration and -20°C freezing are established with independent refrigeration systems.

- MPR-215F-PA
- MPR-N450FH-PA
- MPR-N450FSH-PA
- MPR-715F-PA

## +2°C to +8°C Traditional and emerging vaccine storage

For short-term storage of vaccines days prior to administration.

- TSU-4RW-N6
- SR-L6111W-PA
- MPR-S300H-PA
- MPR-514-PA
- MPR-514R-PA
- MPR-1014-PA
- MPR-1014R-PA
- MPR-722-PA
- MPR-722R-PA
- MPR-1412-PA
- MPR-1412R-PA

[www.phchd.com/us/biomedical/vaccine-storage](http://www.phchd.com/us/biomedical/vaccine-storage)



**PHC Corporation of North America**  
1300 Michael Drive, Suite A, Wood Dale, IL 60191  
Toll Free USA (800) 858-8442, Fax (630) 238-0074  
[www.phchd.com/us/biomedical](http://www.phchd.com/us/biomedical)



We have earned ENERGY STAR certification for a selection of high performance biomedical refrigerators and freezers that operate over a temperature range of 10°C to -40°C. ENERGY STAR products are third-party certified based on testing in EPA-recognized laboratories. For the latest information on our ENERGY STAR products visit [www.phchd.com/us/biomedical/energy-star](http://www.phchd.com/us/biomedical/energy-star).