

Cold Chain Weight & Volume Calculator User guide

UNICEF Supply Division
Immunization Centre

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children

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Intro...

The Cold Chain Weight & Volume Calculator is a practical tool for calculating the space required for in-country deliveries and cold chain storage. It is designed to help Partners/ EPI and Supply managers to calculate their cold chain requirements easily for better supply and in-country logistic planning.

Below, you will find examples and explanations of how to use the calculator.

The calculator will be regularly updated for new products on both the UNICEF Internet website and the UNICEF Intranet.

Please note that the calculator should be used for guidance only, for example in some cases a certain vaccine/supplier you choose may not be available.

If you have any questions or if we can be of assistance, please do not hesitate to contact us.

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How to use the Calculator

4. Click "Add to table" to have cold chain requirements for multiple vaccines

COLD CHAIN CAPACITY



Shipment Data

Vaccine (37 options)

Supplier (3 options)

Quantity (Vials)

1. Select a vaccine from the drop-down menu
2. Select a supplier from the drop-down menu
3. Input the quantity in **vials**

Vaccine - Storage Temperature: Between +2° C and + 8° C, can also be frozen

Inner Carton Specifications						Shipment Totals		
# Vials	Length (cm)	Width (cm)	Height (cm)	Volume (cm3)	Gross Weight (kg)	No. of Inner Cartons	Inner Carton Volume (m3)	Inner Carton Weight (kg)
200	24.30	21.70	10.80	5.695	2.60	175	0.997	455

Shipping Carton Specifications						Shipment Totals		
# Inner Cartons	Length (m)	Width (m)	Height (m)	Volume (m3)	Gross Weight (kg)	No. of Shipping Cartons	Shipping Carton Volume (m3)	Shipping Carton Weight (kg)
8	0.70	0.60	0.59	0.25	39.00	22	5.54	858

Diluent - Storage Temperature: Dry Storage

Inner Carton Specifications						Shipment Totals		
# Vials	Length (cm)	Width (cm)	Height (cm)	Volume (cm3)	Gross Weight (kg)	No. of Inner Cartons	Inner Carton Volume (m3)	Inner Carton Weight (kg)
200	24.30	21.70	10.80	5.695	3.80	175	0.997	665

Shipping Carton Specifications						Shipment Totals		
# Inner Cartons	Length (m)	Width (m)	Height (m)	Volume (m3)	Gross Weight (kg)	No. of Shipping Cartons	Shipping Carton Volume (m3)	Shipping Carton Weight (kg)
6	0.46	0.44	0.36	0.07	24.00	30	2.13	720

If you need 350,000 doses of Yellow Fever vaccines this month, check your historical data for vaccine type and supplier first. In the calculator, choose the vaccine, choose the manufacturer, input the number of vials. The calculator will estimate a range of critical information such as storage temperature requirements and inner & shipping cartons' weights and volumes. For your information, a certain vaccine type / supplier you choose in the calculator may not be available in some cases.

Example : Weight & Volume calculation

COLD CHAIN CAPACITY



Shipment Data

Vaccine	BCG-20	(37 vials)
Supplier	SSI	(4 vials)
Quantity (Vials)	3,000	

Vaccine - Storage Temperature: Between +2° C and + 8° C, can also be frozen

Inner Carton Specifications						Shipment Totals		
# Vials	Length (cm)	Width (cm)	Height (cm)	Volume (cm ³)	Gross Weight (kg)	No. of Inner Cartons	Inner Carton Volume (m ³)	Inner Carton Weight (kg)
50	16.70	8.00	5.00	668	0.39	60	0.040	23

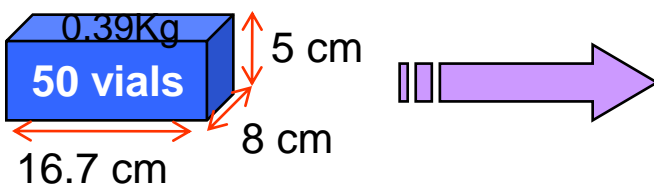
Shipping Carton Specifications						Shipment Totals		
# Inner Cartons	Length (m)	Width (m)	Height (m)	Volume (m ³)	Gross Weight (kg)	No. of Shipping	Shipping Carton	Shipping Carton
60	0.70	0.60	0.40	0.17	35.00	1	0.17	35

Diluent - Storage Temperature: Dry Storage

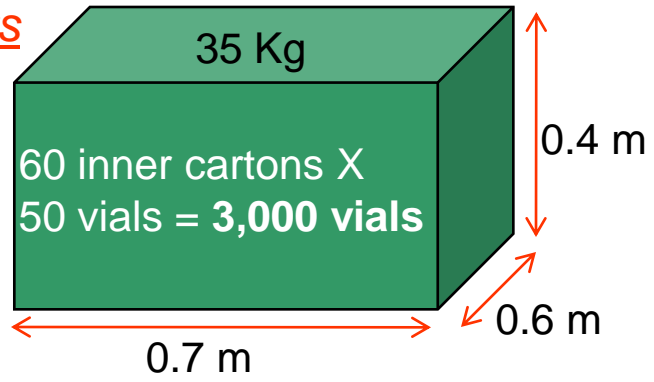
Inner Carton Specifications						Shipment Totals		
# Vials	Length (cm)	Width (cm)	Height (cm)	Volume (cm ³)	Gross Weight (kg)	No. of Inner Cartons	Inner Carton Volume (m ³)	Inner Carton Weight (kg)
50	16.70	8.00	5.00	668	0.43	60	0.040	26

Shipping Carton Specifications						Shipment Totals		
# Inner Cartons	Length (m)	Width (m)	Height (m)	Volume (m ³)	Gross Weight (kg)	No. of Shipping	Shipping Carton	Shipping Carton
60	0.52	0.35	0.26	0.05	26.20	1	0.05	26

Example of BCG-20 Vaccine carton measurements



Vaccine Inner carton



Vaccine Shipping carton

Example : Storage Temperature information

CUMULATIVE TABLE

CLEAR TABLE ADD TO TABLE

Storage Temperatur Between +2° C and +8° C, must not be frozen

Vaccine						
Vaccine	No. of Shipping	Shipping Carton	Shipping Carton	No. of Inner Cartons	Inner Carton Volume (m3)	Inner Carton Weight (kg)
DTP-HepB-Hib-1	139	34.06	6,394.00	10,000	6.57	3,700.00
Total	139	34.06	6,394.00	10,000	6.57	3,700.00

Storage Temperatur Between +2° C and +8° C, can also be frozen at -20° C

Vaccine						
Vaccine	No. of Shipping	Shipping Carton	Shipping Carton	No. of Inner Cartons	Inner Carton Volume (m3)	Inner Carton Weight (kg)
Mea-10	42	4.96	924.00	1,000	1.05	401.00
Total	42	4.96	924.00	1,000	1.05	401.00

Storage Temperatur Between +2° C and +8° C, can also be frozen

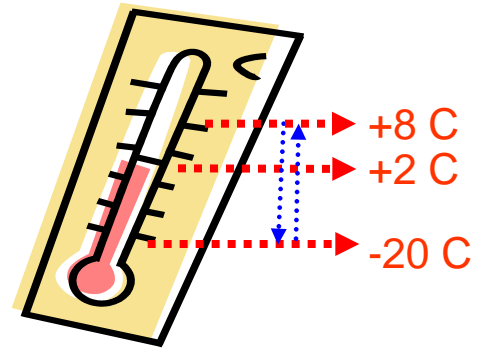
Vaccine						
Vaccine	No. of Shipping	Shipping Carton	Shipping Carton	No. of Inner Cartons	Inner Carton Volume (m3)	Inner Carton Weight (kg)
YF-10	6	0.64	102.00	600	0.07	25.20
Total	6	0.64	102.00	600	0.07	25.20

Storage Temperatur Dry Storage

Diluent						
Diluent/Vaccine	No. of Shipping	Shipping Carton	Shipping Carton	No. of Inner Cartons	Inner Carton Volume (m3)	Inner Carton Weight (kg)
Mea-10	42	1.88	684.60	1,000	1.61	640.00
YF-10	12	0.39	192.00	600	0.00	180.00
Total	54	2.27	876.60	1,600	1.61	820.00

4 categories for Storage Temperature in calculator

- Between +2 C and +8 C, can also be frozen
- Between +2 C and +8 C, must not be frozen
- Should be -20 C
- Dry Storage (Diluents or Droppers for OPV vaccine)



Example : Cumulative Table

CUMULATIVE TABLE

CLEAR TABLE ADD TO TABLE

Click "Add to table" to have cold chain requirements for multiple vaccines

Storage Temperature

Vaccine						
Vaccine	No. of Shipping	Shipping Carton	Shipping Carton Weight	No. of Inner Cartons	Inner Carton Volume (m3)	Inner Carton Weight (kg)
YF-10	22	5.54	858.00	175	1.00	455.00
Total	22	5.54	858.00	175	1.00	455.00

Storage Temperature

Vaccine						
Vaccine	No. of Shipping	Shipping Carton	Shipping Carton Weight	No. of Inner Cartons	Inner Carton Volume (m3)	Inner Carton Weight (kg)
DTP-HepB-Hib-1	14	3.43	644.00	1,000	0.66	370.00
TT-10	47	5.55	1,527.50	1,120	1.18	825.44
Total	61	8.98	2,171.50	2,120	1.84	1,195.44

Storage Temperature

Vaccine						
Vaccine	No. of Shipping	Shipping Carton	Shipping Carton Weight	No. of Inner Cartons	Inner Carton Volume (m3)	Inner Carton Weight (kg)
OPV-20	2,273	490.60	105,694.50	1,000,000	96.05	63,000.00
Total	2,273	490.60	105,694.50	1,000,000	96.05	63,000.00

Storage Temperature

Vaccine						
Vaccine	No. of Shipping	Shipping Carton	Shipping Carton Weight	No. of Inner Cartons	Inner Carton Volume (m3)	Inner Carton Weight (kg)
MMR-10	30	3.54	771.00	700	0.74	305.20
Total	30	3.54	771.00	700	0.74	305.20

Storage Temperature

Diluent						
Diluent/Vaccine	No. of Shipping	Shipping Carton	Shipping Carton Weight	No. of Inner Cartons	Inner Carton Volume (m3)	Inner Carton Weight (kg)
YF-10	30	2.13	720.00	175	1.00	665.00
MMR-10	30	1.40	465.00	700	1.09	408.10
Total	60	3.53	1,185.00	875	2.08	1,073.10

This feature is very useful when you plan to receive multiple vaccines in the same month. The information in this table will help you estimate the transport requirements, the required size and temperature of storage facilities in all levels.

Thank You