

Vaccination

Vaccination Carrier

No.	Item Specifications
1	Description of Function
1.1	Cold Box/Vaccine Carrier is essential for safe transportation of sensitive vaccines from the place of manufacturing to the place of field storage and final carriage to the place of immunization. Thus, CFC-free cold boxes/vaccine carrier ensure a pre-determined safe temperature range (-3 to + 8 0C) for a particular period known as cold life of the product. The cold life period varies according to the product classifications made by WHO i.e. for large equipment like cold boxes, the cold life is high whereas for small equipment like vaccine carriers the cold life requirement is less.
2	Operational Requirements
2.1	To carry vaccine, for small one-day immunization outreach sessions.
3	System Configuration
3.1	The system consists of:
	☐ Vaccine Carrier-large
	☐ CFC free, PUF insulation
4	Technical Specifications
4.1	Vaccine carrier:
	☐ Vaccine storage capacity 2 litres
	☐ Cold life 40 hours or more
4.2	Cold life without openings: 40 hrs. at +43°C.
4.3	Weight fully loaded must be less than 7kg.
4.4	Weight empty (with empty ice pack) must be less than 3kg.
4.5	External Surface Material: Polyethylene
4.6	Internal Lining Material: Polyethylene or Polystyrene
4.7	Insulation Material: Polyurethane
4.8	Insulation Thickness: 35mm or more
4.9	Lid type & fixings: Removable
4.1	Shall provide with one set of 0.3 or 0.4 litre or 0.6 litre ice packs.
5	Accessories, spares and consumables
5.1	Shall provide extra set of ice packs.
6	Operating Environment
6.1	Cold life minimum 40 hours at 43°C without openings.
7	Standards and Safety Requirements
7.1	Shall meet UNICEF/WHO Standard E4/VC2.
	Bidder shall provide the WHO PQS report.
7.2	The system shall be tested as per WHO Standard Test procedures as per E4/PROC/1.
8	User Training
8.1	Not applicable.
9	Warranty
9.1	Warranty for 2 years after acceptance.
10	Maintenance Service During Warranty Period
10.1	Standard warranty conditions are applicable.
11	Installation and Commissioning
11.1	Must supply preassembled unit, ready to use.
12	Documentation
12.1	Manufacturer's certification of compliance of test procedures as per WHO Standards Test Procedures.
12.2	Inspection Certificate from manufacturer to be complying with WHO specification as specified above.
12.3	Manual(s):
	Manual(s) with clear descriptions for users. The manual(s) shall be provided in the English language.
12.4	Packing:
	Labels bearing handling instructions shall be highly visible and printed clearly on the outer packing.

Cold Box-large long range (20L)

No.	Item Specifications
1	Description of Function
1.1	Cold Box is essential for the safe transportation of sensitive vaccines from the place of manufacturing to the place of field storage and final carriage to the place of immunization. Thus, CFC-free cold boxes ensure a pre-determined safe temperature range (-3 to + 8 oC) for a particular period known as cold life of the product. The cold life period varies according to the product classifications made by WHO i.e. for large equipment like cold boxes, the cold life is high whereas for small equipment like vaccine carriers the cold life requirement is less.
2	Operational Requirements
2.1	The large cold box, long range must be able to keep the vaccine safe while transporting to long distances for longer hours of time.

	3 System Configuration
	3.1 The system consists of:
	☑ Cold Box – large long range
	☑ CFC free, PUF insulation
	☑ Carrying handles
	☑ Ice packs
	4 Technical Specifications
	4.1 Vaccine cold box, large, long range:
	☑ Vaccine storage capacity 20 litres approx.
	☑ Cold life 121-126 hours or more
	4.2 External surface and internal lining material: Polyethylene
	4.3 Shall maintain cold life minimum 121-126 hours or more at 43°C without opening the cold box
	4.4 Shall come with hinged lid.
	4.5 Weight fully loaded must be less than 50kg.
	4.6 Weight empty (with empty ice pack) must be less than 25kg.
	4.7 Insulation material: Polyurethane foamed.
	4.8 Insulation thickness: At least 100mm.
	4.9 Shall provide with one set of 0.3 or 0.4 or 0.6 litre ice packs.
	5 Accessories, spares & consumables
	5.1 Shall provide extra set of ice packs.
	6 Operating Environment
	6.1 Cold box shall maintain cold life requirements for a minimum of 121-126 hours or more without opening, when the constant ambivalent temperature is 430 C.
	7 Standards and Safety Requirements
	7.1 Shall meet WHO/UNICEF Standard E4/CB.2.
	Bidder shall provide the WHO PQS report.
	7.2 The system shall be tested as per WHO Standard Test procedure as per E4/PROC/1.
	8 User Training
	8.1 Not applicable.
	9 Warranty
	9.1 Warranty for 1 year.
	10 Maintenance Service During Warranty Period
	10.1 Standard warranty conditions are applicable.
	11 Installation and Commissioning
	S.N. Purchaser's Specifications
	11.1 Must supply preassembled unit, ready to use.
	12 Documentation
	12.1 Manufacturer's certification of compliance of test procedures as per WHO Standards Test Procedures.
	12.2 Inspection Certificate from manufacturer to be complying with WHO specification as specified above.
	12.3 Manual(s):
	Manual(s) with clear descriptions for users. The manual(s) shall be provided in the English language.
	12.4 Packing:
	Labels bearing handling instructions shall be highly visible and printed clearly on the outer packing.

Ice Bag

No.	Item Specifications
1	Description of Function
1.1	Ice-packs are used for the transport of vaccines and other biological specimens and thus ensure
2	Operational Requirements
2.1	Ice-pack or water-pack frozen to a temperature between -5°C and -20°C before use.
3	System Configuration
3.1	0.4 litre Ice-pack with screw cap.
4	Technical Specifications
4.1	Capacity: 0.4 litres
4.2	Water content: 0.35 to 0.4 litres
4.3	External dimensions: 163 x 94 x 34 mm, +/- 2 mm.
4.4	Ice-pack walls to be reinforced in order to prevent swelling.
4.5	It shall come with removable cap, with internal water seal to prevent leakage.
4.6	It shall have filling line indicated on one side.
4.7	It shall have 2 holes for keeping vaccine vials.
5	Accessories, spares and consumables
5.1	Not applicable.
6	Operating Environment

6.1	The product offered shall be designed to be stored and to operate normally under the conditions of the purchaser's country. The conditions include Climate, Temperature, Humidity, etc.
7	Standards and Safety Requirements
7.1	Shall meet UNICEF/WHO Standard E005/IP01-VP.2.
7.2	Bidder must provide the WHO PQS prequalified certificate.
7.3	The system shall be tested as per WHO Standard Test procedures as per E4/PROC/1.
8	User Training
8.1	Not applicable.
9	Warranty
9.1	Warranty for 2 year after acceptance.
10	Maintenance Service During Warranty Period
10.1	Standard warranty conditions are applicable.
11	Installation and Commissioning
11.1	Must supply preassembled unit, ready to use.
12	Documentation
12.1	Manufacturer's certification of compliance of test procedures as per WHO Standards Test Procedures.
12.2	Inspection Certificate from manufacturer to be complying with WHO specification as specified above.
12.3	Manual(s):
	Manual(s) with clear descriptions for users. The manual(s) shall be provided in the English language.
12.4	Packing:
	Labels bearing handling instructions shall be highly visible and printed clearly on the outer packing.

Solar Vaccine Refrigerator

No.	Item Specifications
1	Description of Function
1.1	This equipment is used primarily in areas without any electricity or where there is less than 8 hours of reliable electricity over a typical day.
2	Operational Requirements
2.1	The battery solar powered refrigerator and freezer will work during the day directly from the solar panel, while during nights operating from storage battery.
3	System Configuration
3.1	The system consists of :
	☐ Solar PV Panels.
	☐ Components for mounting the PV system.
	☐ Earth Connection.
4	Technical Specifications
	☐ Battery & Charge Regulators.
	☐ Combined chest type Ice-lined Vaccine Refrigerator and Freezer.
4	Technical Specifications
I	Solar PV Panels
4.1	Technology:
	Based on Polycrystalline silicon solar cells.
4.2	Power Rating:
	☐ 500 to 540 Watt peak.
	☐ In modules of 100 to 135 Wp.
	Solar Array Peak Power, in combination with the supplied battery capacity, must be guaranteed to power the refrigerator and freezer reliably during the months of minimal solar radiation and the months of maximum temperature respectively.
4.3	Panel Surface:
	Panels to be covered by anti-reflecting glass.
4.4	Panel frame:
	Aluminium with stainless steel/bronze screws for fixing.
II	Components for mounting the PV system
4.5	Panel Mounting Support Structure:
	Metallic frame preferably slotted anodized aluminium or stainless steel or steel angles with stainless steel screws and self-locking washers for mounting the solar panel on the rooftop or ground. Frame must allow adjustment to incline the panels towards the sun's path during mounting. Array cables must be weather shielded in case of rooftop installations or of direct burial type, in case of ground installations.
4.6	Array structures shall be designed to withstand loads of more than 200 Kg/m ² and shall be supplied with fixings for either ground or rooves mounting. Protection against the effect of lightning will be provided to protect the battery charge regulator and other components.
4.7	Electrical Mounting Accessories:
	Electrical cables sufficient (16 to 20 meters long or as per requirements) to carry the panel currents to the system and battery without loss.
	Additional cables for connecting the Charge regulator to system and battery.
4.8	Earth Connection:
	One complete earth connection kit.

4.9	Quality Standard:
	Must comply with WHO/UNICEF E3/ PV01.
4.10	Protection against theft:
	Must have provision to anti-theft mechanism.
III Battery & Charge Regulators	
4.11	Type of Battery:
	Maintenance free Sealed or Flooded / Gel or Tubular Lead Acid type - Deep discharge, and shall have low self-discharge.
4.12	Total Battery Capacity:
	280 Ah X 4 batteries or (420-500) Ah X 2 batteries of 6 Volt.
4.13	Autonomy on fully charged battery:
	Minimum 5 days without sun (autonomous days) to run the refrigerator (without icepack freezing) under the prevailing temperature conditions.
4.14	Battery set housing:
	Plastic box with locking facility.
4.15	Miscellaneous Additional cables, plugs, connectors, fuses and other materials for complete mounting of system.
	Battery safety kit equipment for protection of eye, hand, clothing etc.
4.16	Charge regulator/ controller:
	Charge controller, as recommended 6V, 30A with LCD display of parameters like battery voltage, array amps status, load amps draw and system performance.
	Lightning surge protection shall be provided.
	They must be precisely set to meet the charge and temperature requirements of the selected battery They shall disconnect the load when the battery has reached a state of charge which can be repeated a minimum of 1000 cycles.
	The battery charge regulator must meet the WHO designed specifications and Bidders shall submit the documentary evidence of compliance
IV Combined chest type Ice-lined Vaccine Refrigerator and Freezer:	
4.17	Capacity:
	Refrigerator:
	☐ Net: 30 to 45 litres.
	☐ Gross: 75 to 85 litres.
	Freezer:
	☐ Net: 20 to 25litres.
	☐ Gross: 30 to 40 litres.
4.18	Temperature Control / Holdover Time:
	The refrigerator shall without energy and without being opened hold a temperature in the range of +2 oC to +8oC for a period as per WHO PQS requirements and preferably higher hours in a continuous external temperature of +43 oC.
	Bidder shall provide details of holdover time of their product.
4.19	Refrigerants:
	The refrigerators& freezer shall utilize CFC (chlorofluorocarbon) free refrigerants preferably R134A.
4.2	Insulation:
	Minimum 100 mm polyurethane foam.
4.21	Corrosion Resistance:
	Internal and external cabinet, lid and frame shall be protected against corrosion to DIN 8985.
5 Accessories, spares and consumables	
5.1	Accessories:
	☐ Lock with key or combination lock on door.
	☐ External reading thermometer.
	☐ Vaccine storage baskets.
	☐ Icepack storage baskets.
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).
6 Operating Environment	
6.1	Must be suitable for hot zones, up to 43 0C.
7 Standards and Safety Requirements	
7.1	Must submit ISO 9001 or ISO13485:2003/AC:2007 AND
7.2	Shall meet UNICEF/WHO standard E003 preferably WHO PQS certified product.
8 User Training	
8.1	Must provide user training (including how to use and maintain the equipment).
9 Warranty	
9.1	The minimum period of the comprehensive warranty shall be 10 years for the solar array, 5 years for the batteries and 2 years for the other components after acceptance.
10 Maintenance Service During Warranty Period	
10.1	During the warranty period supplier must ensure preventive maintenance along with corrective/breakdown maintenance whenever required.
11 Installation and Commissioning	

11.1	The bidder must arrange for the equipment to be installed and commissioned by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance, in detail.
12	Documentation
12.1	User (Operating) manual in English.
12.2	Service (Technical / Maintenance) manual in English.
12.3	List of important spare parts and accessories with their part numbers and costing.
12.4	Certificate of calibration and inspection from factory.