

Technical Specifications of Cold Box (Large)

1 Description of Function

SI	Name
1.1	Cold Box 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 ensure a pre-determined safe temperature range (+2 to + 8 C) 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

SI	Name
2.1	The Large cold box , long range should be able to keep the vaccine safe while transporting to long distances for longer hours of time.

3 Technical Specifications

SI	Name
3.1	Vaccine Storage Capacity 20- 25 litres(any capacity within this range is acceptable)
3.2	Weight Fully Loaded should be up to 50 Kgs
3.3	Weight Empty (with empty ice pack)should be up to 25 Kg
3.4	External surface and internal lining material LLDPE-(Linear Low Density Polyethylene)
3.5	Insulation material CFC-free Polyurethane
3.6	Insulation thickness 100-120 mm
3.7	Each Cold Box shall contain adequate ice packs of following specs: Volume of Ice Pack 0.35 -0.4 litres. External dimensions 165*95*33 mm +/-1mm
3.8	Each vaccine carrier/cold box shall contain ice packs of WHO Specifications PIS Ref: E5/IP.2. The specifications are as given below: Water Content: 0.35 to 0.4 Litres. External Dimensions: 165x95x33 mm +/- 1 mm. Robustness: The Ice Packs samples shall withstand a one metre drop on every face, edge and corner when in a frozen state (-10 deg C to -20 deg C). It will then successfully pass the leakage test after thawing. Leakage Test: No leaks when 40 Kg lateral force is applied. Features: Effective reinforcements to restrain walls against swelling. Removable cap for filling ;cap to have effective internal water seal to resist 40 kg lateral force with no leakage. Manufacturer's recommended filling line to be clearly indicated. Freezing Characteristics: Shall not display super-cooling characteristics when filled with demineralised water and frozen in flat, horizontal contact with evaporator at - 8 deg C. Maximum thickness of the icepack, when frozen solid and laid flat on an evaporator surface , shall not exceed the unfrozen thickness by more than 25%. The internal dimension of the unit should be sufficient to accommodate the largest tolerances of the standard ice packs.

3.9	Should meet Cold Life Requirement as per WHO at 43deg C without opening Minimum 96 hrs.
3.10	Should be provided with handles for two people to carry it to a large vehicle.

4 System Configuration Accessories, spares and consumables

SI	Name
4.1	Large Cold Box- Large Range(including integrated lockable fittings)-

5 Power Supply

SI	Name
	None

6 Standards, Safety and Training

SI	Name
6.1	The equipment should Conform to WHO Specifications E004/CB01.3The equipment should preferably be listed on the Product Information Sheet of WHO.
6.2	The system should be tested as per WHO Standard Test procedures as per E004/CB01-VP.3. Copy enclosed

7 Documentation

SI	Name
7.1	Manufacturers certification of compliance of test procedures as per WHO Standards Test Procedures.
7.2	Inspection Certificate from manufacturer to be complying with WHO specification as specified above.