Anaerobic Systems

- LE002 – Anaerobic System Mark II
- LE003 – Anaerobic System Mark III
- LE012 – Anaerobic System Mark V
- LE013 – Anaerobic System Mark VI

LE002

LE003

HiMediaLaboratories™

HiMedia Laboratories Pvt. Limited

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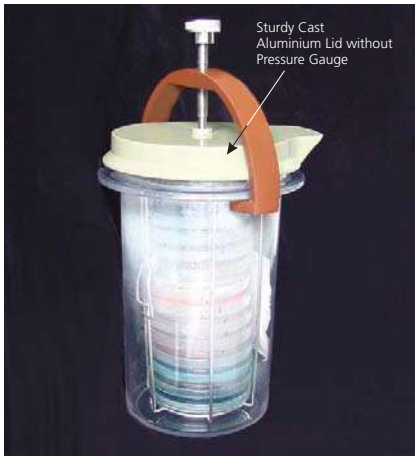
For life is precious

Anaerobic Systems (3.5 litres) – Mark II & Mark III



LE002 — Anaerobic System Mark II

Product Specifications :

Transparent unbreakable Polycarbonate jar - 1unit
Sturdy Cast Aluminium lid - 1 unit
Sturdy Cast Aluminium Clamp - 1 unit
Nitrile Rubber Sealing O-ring - 1 unit

Other accessories available :

Petriplate Carrier (SS) (LE001D) - 1 unit
Test Tube Carrier (SS) (LE001E) - 1 unit
AnaeroGas Pack (LE002A)* - 1 unit
Anaero Indicator Tablet (LE001B)# - 1 box

* : Shelf life - 1 year # : Shelf life - 6 months

LE003 — Anaerobic System Mark III

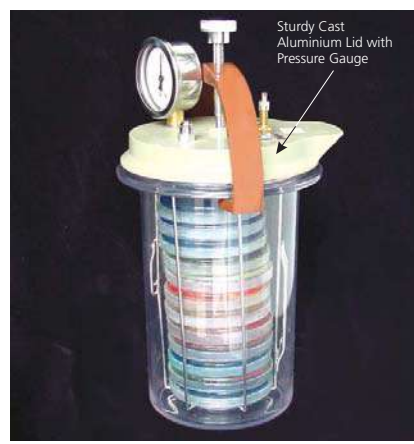
Product Specifications :

Transparent, Unbreakable Polycarbonate jar - 1 unit
Sturdy Cast Aluminium lid - 1 unit
Built-in safety valve and 2 way pressure gauge
Sturdy Cast Aluminium Clamp - 1 unit
Nitrile Rubber Sealing O-ring - 1 unit

Other accessories available :

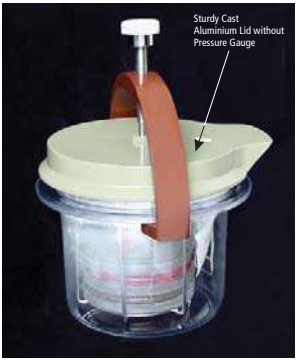
Petriplate Carrier (SS) (LE001D) - 1 unit
Test Tube Carrier (SS) (LE001E) - 1 unit
Anaero Indicator Tablet (LE001B)# - 1 box

: Shelf life - 6 months



For various AnaeroGas Pack systems available, please refer the Table under heading
Anaerobic Gas Production Systems (Mark II / Mark V)

Anaerobic Systems (1.5 litres) – Mark V & Mark VI

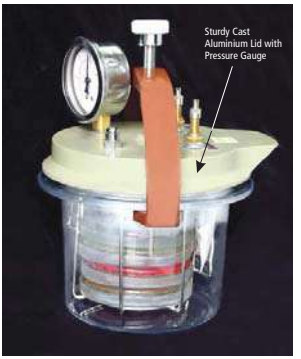


LE012 — Anaerobic System Mark V

Product Specifications :
Transparent unbreakable Polycarbonate jar - 1unit
Sturdy Cast Aluminium lid - 1 unit
Sturdy Cast Aluminium Clamp - 1 unit
Nitrile Rubber Sealing O-ring - 1 unit

Other accessories available :
Petriplate Carrier (SS) (LE001F) - 1 unit
AnaeroGas Pack (LE002F)* - 1 unit
Anaero Indicator Tablet (LE001B)# - 1 box

* : Shelf life - 1 year # : Shelf life - 6 months



LE013 — Anaerobic System Mark VI

Product Specifications :
Transparent, Unbreakable Polycarbonate jar - 1 unit
Sturdy Cast Aluminium lid - 1 unit
Built-in safety valve and 2 way pressure gauge
Sturdy Cast Aluminium Clamp - 1 unit
Nitrile Rubber Sealing O-ring - 1 unit

Other accessories available :
Petriplate Carrier (SS) (LE001F) - 1 unit
Anaero Indicator Tablet (LE001B)# - 1 box

: Shelf life - 6 months

Anaerobic Gas Production Systems

Precise and easy to operate AnaeroGas Packs as per user requirement

For AnaeroGas Pack systems available, please refer the Table under heading Anaerobic Gas Production Systems (Mark II / Mark V)

Anaero Indicator Tablet – LE001B

For detection of anaerobic environment

Directions for use:

1. Remove the Anaero Indicator tablet keeping intact the transparent cover. On removal the original pink colour may change to purplish-blue because of absorption of oxygen. Under anaerobic conditions this colour will change to pink.
2. Place the indicator tablet into the Anaerobic jar, with the cover intact, along with the pouch provided with the jar. One tablet is sufficient for a jar of 3.5 litre/ 1.5 litre capacity.
3. Place the material for incubation and seal the anaerobic jar according to directions. It may take a few hours for the tablet to turn completely pink to indicate anaerobic conditions inside.
4. Incubate at the desired temperature.

Important : Do not take out the tablet from the transparent cover. Store in a cool dry place, preferably refrigerated. Though the colour change is reversible, Its sensitivity decreases after one use. It is recommended to use fresh tablet for each use.

Anaerobic System consists of a transparent unbreakable Polycarbonate jar of 3.5 litres / 1.5 litres capacity along with a sturdy Aluminium lid (Mark II, Mark III) / (Mark V, Mark VI) assembly as follows:

1. Anaerobic Jar - A transparent unbreakable Polycarbonate jar of 3.5 / 1.5 litres capacity.
2. A sturdy Aluminium lid, a sturdy metal beam clamp, and 1-Nitrile rubber sealing O-ring.
3. A pressure valve, a safety valve (set to 1 kg pressure), two-way pressure gauge for indicating positive and negative pressure in the jar in case of Mark III / Mark VI unit.
4. Stainless Steel Petriplate Carrier (LE001D) in case of LE002, LE003; LE001F in case of LE012, LE013. Stainless Steel Tube Carrier (LE001E) in case of LE002, LE003, each having clips for Gas pack and for Indicator tablet (LE001B).
5. A dual purpose O_2 absorbing and CO_2 generating pack : AnaeroGas Pack 3.5L (LE002A) for Mark II. AnaeroGas Pack 1.5L (LE002F) for Mark V.

The Anaerobic System - Mark II / Mark III / Mark V & Mark VI has been designed only for the culturing of anaerobic microorganisms.

Directions for use with the Gas Generating Kit, i.e., obtaining anaerobic environment through the use of the range of AnaeroGas Packs (LE002A, LE002F) for Mark II & Mark V systems.

1. Place the Petriplates in the carrier.
   When disposable plastic Petriplates are used then they should be of the vented variety to aid gas transfer between the interior and exterior of the plates.
2. Cut open HiMedia's Anaero Indicator Tablet sachet (LE001B) and remove one tablet pack. Insert the pack into the smaller (upper) clip on the plate carrier immediately.
3. Lower the plate carrier into the Polycarbonate base.
4. Read information on AnaeroGas Pack carefully. Cut off the top of any one required AnaeroGas Pack (LE002A / LE002F) as indicated by the cut mark, remove sachet, place it in the lower clip of the plates carrier.
5. Place the lid on the base making sure that the O-ring is correctly in place (evenly pressed against the flange as a secure fit). Apply the beam clamp. Screw down the knurled wheel until tight.
6. The Anaerobic Indicator tablet will remain pink in the jar indicating anaerobiosis. Any kind of leakage leading to aerobic conditions will turn the colour of tablets to purple.
7. After incubation the Anaerobic Indicator tablet may be discarded with the normal laboratory litter. The exhausted AnaeroGas Pack sachet should be removed without spilling the contents and discarded carefully as per instructions printed on the AnaeroGas Pack cover.

Anaerobic Gas Production Systems (Mark II /Mark V)

Code	Product	Packing
LE002A	**AnaeroGas Pack 3.5L** This is a disposable oxygen absorbing and carbon dioxide generating agent for use in anaerobic jars. No catalyst or pressure gauge is necessary for this pack since no gas pressure is generated. Packed 5 sachets per box.	5 no
LE002F	**AnaeroGas Pack 1.5L** This is a disposable oxygen absorbing and carbon dioxide generating agent for use in anaerobic jars. No catalyst or pressure gauge is necessary for this pack since no gas pressure is generated. Packed 5 sachets per box.	5 no

O-Ring

Care should be taken that grease and organic solvents do not come in contact with the O-ring or a perfect seal may not be obtained. O-rings should be regularly inspected to make sure that no undue distortion has taken place, and should be replaced if there are any signs of splitting or other faults. The O-ring is placed over the top of the jar and evenly pressed against the flange as a secure fit.

Instructions for laboratories possessing HiMedia's Anaerobic System - Mark III (LE003) / Mark VI (LE013) having sturdy Cast Aluminium lid with pressure vacuum gauge and safety valve. The following alternative may also be available to you.

Gas Mixture to be used in conjunction with the 'Evacuation Replacement Technique' for obtaining anaerobic environment.

This should be a mixture of 90% H_2 and 10% CO_2 or for safer operation, 80% N_2, 10% H_2 and 10% CO_2 which is to be prepared in your own laboratory.

Because of the low concentration of Hydrogen present in a gas (N_2, H_2 and CO_2) mixture, double evacuation technique is recommended. This is carried out by evacuating the system to about -0.6 bar. Run gas mixture into the jar until the pressure is zero and immediately evacuate the system a second time to about -0.6 bar. Run gas mixture into the jar again until the pressure is zero. Disconnect the chuck.

Directions for use in Evacuation/Replacement Technique

1. Place the Petriplates in the carrier. Disposable plastic Petriplates should be of the vented variety to aid gas transfer between the interior and exterior of the plates.
2. Cut open HiMedia's Anaero Indicator Tablet Sachet (LE001B) and remove one tablet pack. Insert the pack into the smaller (upper) clip on the plate carrier immediately.
3. Lower the plate carrier into the Polycarbonate base.
4. Place the lid on the base making sure that the O-ring is correctly in place (evenly pressed against the flange as a secure fit). Apply the beam clamp. Screw down the knurled wheel until tight.
5. HiMedia chucks have to be used for the Evacuation/Replacement Technique to enable a vacuum to be drawn. One chuck is fitted to the vacuum line and one to the gas supply by means of the clips provided. The 'input' valve has a metal nozzle below the lid. The plastic tubing provided can be attached to the nozzle to ensure that incoming gas enters at the bottom of the jar to improve mixing of the Hydrogen with the residual Oxygen.
6. Fit the chuck connected to the vacuum line to the valve marked 'Vacuum' as follows:

   Depress the side arm on the chuck body and PRESS (not screw) the open end of the chuck firmly down on to the valve body. Screwing will damage the sealing rubber washer and cause the chuck to leak.

   While maintaining a firm downward pressure on the body of the valve, release the side arm of the chuck. This will clip the chuck firmly and without leakage on to the valve.
7. Evacuate the system to about -0.6 bar pressure. The knurled wheel on the beam must not be further tightened if it appears loose.
8. After use, simply depress the side arm of the chuck and lift straight away from the valve in order to disconnect it. Observe the pressure gauge. A leaking jar will be detected at this stage because the vacuum reading will not remain constant.
9. Attach the chuck connected to the gas supply to the input valve of the jar. Run the gas mixture into the jar until the pressure is zero. Disconnect the chuck.
10. Observe pressure changes in the jar.
11. Release more gas mixture to the jar until the gauge reads zero. Disconnect the chuck. Incubate the jar.
12. The Anaerobic Indicator tablet will remain pink in the jar indicating anaerobiosis. Any kind of leakage leading to aerobic conditions will turn the colour of tablets to purple.
13. After incubation the Indicator tablet should be discarded with the normal laboratory litter.
14. The interior of the lid and jar should be kept free of dust.

Precautions:

Do not connect directly to high pressure gas cylinders. Always use an intermediate pressure system e.g. a reducing valve or rubber bladder. H_2 and CO_2 gas mixture is flammable and appropriate precautions should be taken. Keep away from all naked flames and sparking electrical equipment.

General Notes

Disinfection Method

ON NO ACCOUNT SHOULD THE LID BE AUTOCLAVED

It may be cleaned by swabbing carefully with 70% alcohol. If more extensive disinfection is required, 20 ml of 10% v/v formalin solution can be added to the jar and the anaerobic system is incubated at 37°C overnight. Sodium hypochlorite or strong detergent solutions should be avoided.

Care of Anaerobic Jar

Each HiMedia Polycarbonate base and lid assembly has been checked and pressure tested before despatch. On receipt, and in routine use, the lid components should be checked to ensure that they are screwed securely into the lid and that no damage has occurred to the face of the gauge. In case of LE003 (Mark III) / LE013 (Mark VI), the safety valve is preset to vent at 0.7 bar, and it will automatically reseal after venting.

After each use lid can be cleaned and dried with soft tissue, taking care not to scratch the surface coating. The jars are best stored open, with the lid inverted, in a warm dry place. Care must be taken to prevent contamination by dust. It is good practice to label all lids and bases so that a check can be kept on the performance of the individual components.

Valves (LE003, Mark III / LE013 Mark VI)

These special heavy duty valves have spring loaded cores fitted with a stainless steel spring, with a butile rubber valve seat and sealing ring. The valve is always closed until the shielded centre core pin is depressed. The valves can only be used in conjunction with HiMedia chucks. When a chuck is attached to the valve, both the air-way of the chuck and the valve are fully open and allow gas to flow in either direction. Immediately the chuck is detached from the valve, the valve seals instantly; the chuck itself is also self-sealing when detached from the valve.

Changing a Valve Core :

The valve core can be unscrewed from the body of the valve using the valve cap provided. A replacement valve core can be fitted if necessary. Valve cores should always be securely tightened.

Dust Caps :

Plastic dust caps are provided to prevent dust particles entering the valve core and possibly interfering with efficient operation of the spring mechanism.

Anaerobic System Mark II – LE002
(Shown here with plates, AnaeroGas Pack & Anaero Indicator Tablet)

Petri-plate Carrier (SS) – LE001D
(Shown here with plates, Anaero Indicator Tablet)

Tube Carrier (SS) – LE001E
(Shown here with tubes)

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