

## Anaerobic Cultivation and Handling

### Hungate Anaerobic Culture Tubes with Screw Thread



- Tubes from Borosilicate glass for anaerobic culture conditions
- The technique developed by Hungate et al. is ideal for cultivation of anaerobic microorganism with sample harvesting and feeding by piercing the butyl rubber stopper with a needle
- Hungate tubes complete consist of following items:
  - a) Screw cap with a 9 mm opening
  - b) Flange style stopper made from grey butyl rubber, 5.4 mm height
  - c) 16 x 125 mm screw thread style tube designed to maintain anaerobic conditions

Lit.: "Use of Syringe Methods for anaerobics"; J.M. Macy, J.E. Snellen and R.E. Hungate. J. Clin. Nutrition, Dec. 1972.

Cat. No.	Description	Dimensions	Cs.
CLS-4208-01	Hungate Tubes complete, incl. butyl rubber stoppers and screw caps	16 x 125 mm	100

#### Replacement components

CLS-4208-10	Hungate glass tubes	16 x 125 mm	100
CLS-4208-11	Open top screw caps	Opening: 9 mm	100
CLS-4208-12	Butyl rubber stoppers	Height: 5,4 mm	100

### Balch Anaerobic Culture Tubes with Aluminum Seal



- Tubes from Borosilicate glass for anaerobic culture conditions
- Especially suited for gas producing bacteria, for over-pressure between 2 - 3 bar
- Culture tubes complete consist of the following autoclavable parts:
  - a) 20 mm aluminum crimp seal with 9 mm opening, for safe and gas-tight closing
  - b) Gas-tight flange style stopper made from blue butyl rubber, 14 mm height
  - c) 18 x 150 mm crimp style tube designed to maintain anaerobic conditions
- Crimper and Decapper for aluminum seals (please see overleaf)

Cat. No.	Description	Dimensions	Cs.
CLS-4209-01	Anaerobic tubes complete, incl. butyl stoppers and aluminum seals	18 x 150 mm	100

#### Replacement components

CLS-4209-10	Glass tubes	18 x 150 mm	100
CLS-4209-12	Aluminum seals with 9 mm opening	Ø: 20 mm	100
CLS-4209-14	Butyl rubber stoppers	Höhe: 14 mm	100

## Anaerobic Bottles with Aluminium Seals



- Bottles for anaerobic culture conditions (without rubber stopper and seal)
- Gas tight blue butyl rubber stoppers as for Balch tubes (CLS-4209-01)
- Manufactured from Borosilicate glass

Cat. No.	Description	Cs.
CLS-4215-03	Anaerobic culture bottle, 500 ml, single neck	1
CLS-4215-05	Anaerobic culture bottle, 1000 ml, single neck	1
CLS-4215-01	Anaerobic culture bottle, 2000 ml, two necks	1

### Replacement components

CLS-4209-12	Aluminum seals, 20 mm diameter, with 9 mm opening	100
CLS-4209-14	Butyl rubber stoppers, 20 mm diameter, 14 mm height	100

## Anaerobic Bottles with Aluminium Seals



- Bottles for anaerobic media storage (with rubber stopper and seal)
- Gas tight blue butyl rubber stoppers as for Balch tubes (CLS-4209-01)
- Manufactured from Duran® Schott Borosilicate glass, with graduation and marking area

Cat. No.	Description	Cs.
CLS-4217-01	Anaerobic media bottle, 50 ml	1
CLS-4217-02	Anaerobic media bottle, 100 ml	1
CLS-4217-03	Anaerobic media bottle, 250 ml	1
CLS-4217-04	Anaerobic media bottle, 500 ml	1
CLS-4217-05	Anaerobic media bottle, 1000 ml	1

### Replacement components

CLS-4209-12	Aluminum seals, 20 mm diameter, with 9 mm opening	100
CLS-4209-14	Butyl rubber stoppers, 20 mm diameter, 14 mm height	100

## Anaerobic Stopper for GL45 Flasks



- Anaerobic stopper optimized to fit GL45 bottles
- High purity bromobutyl rubber with low permeability to air, gases and moisture
- Upper surface features seven numbered impressions for repeated needle piercing
- Temperature range: - 50 to + 121 °C

Cat. No.	Description	Cs.
CLS-4209-B45	Anaerobic Stopper, 45 mm	10

## Crimper and Decapper for Anaerobic Culture Tubes and Bottles



- Hand operated
- For 20 mm aluminum seals (CLS-4209-12)

Cat. No.	Description	Cs.
CG-4930-20	Crimper for 20 mm aluminum seals	1
CG-4930-21	Decapper (Pliers-Type)	1
CV-5706-0020	Decapper for 20 mm aluminum seals (Crimp-Type)	1

## Polycarbonate Erlenmeyer Flasks with patented vented DuoCap®

### One Flask - Two Applications



### Flask from polycarbonate with screw thread

- Optically clear, leak- and shatterproof
- Including vented DuoCap®
- With or without baffles
- With molded graduations
- Compatible with standard shaker clamps
- Sterile (Gamma Irradiation)
- Pyrogen, DNase and RNase free
- Temperature range: -125 °C to +125 °C
- Autoclavable (≤ 10 Cycles)

### Vented DuoCap®

- For aerobic and anaerobic applications
- Easily convertible to a solid top cap
- Polypropylene cap with 0.22 µm PTFE membrane
- Thread: 38-430 or 53-B
- Autoclavable

### Application:

1. Add culture media and inoculum



2. Add DuoCap for anaerobic culture



3. Remove dust guard cover for aerobic culture



4. Move into shaker incubator



### Cat. No.

### Description

### Cs.

#### Plain/without baffles

CLS-2092-125S	125 ml, 38-430 Thread, with DuoCap®, sterile	<i>Bulk packs available on request</i>	24
CLS-2092-250S	250 ml, 38-430 Thread, with DuoCap®, sterile		12
CLS-2092-500S	500 ml, 38-430 Thread, with DuoCap®, sterile		12
CLS-2092-100S	1000 ml, 53-B Thread, with DuoCap®, sterile		6
CLS-2092-200S	2000 ml, 53-B Thread, with DuoCap®, sterile		6

#### With four side baffles

CLS-2093-125S	125 ml, 38-430 Thread, with DuoCap®, sterile	<i>Bulk packs available on request</i>	24
CLS-2093-250S	250 ml, 38-430 Thread, with DuoCap®, sterile		12
CLS-2093-500S	500 ml, 38-430 Thread, with DuoCap®, sterile		12
CLS-2093-100S	1000 ml, 53-B Thread, with DuoCap®, sterile		6
CLS-2093-200S	2000 ml, 53-B Thread, with DuoCap®, sterile		6

#### Replacement caps

CLS-2090-0053M	DuoCap®, 53-B Thread, with DuoCap®, sterile	48
CLS-2090-0038M	DuoCap®, 38-430 Thread, with DuoCap®, sterile	48

### Also in our portfolio:

Fernbach flasks with vented DuoCap®, more flasks, tubes and vials from polycarbonate, standard-, tamper evident- and septum caps (also as septum DuoCap®) from polypropylene

## Chambers for Anaerobic and Hypoxic Applications

**SHELDON**  
MANUFACTURING, INC.

**BACTRON**



- Integrated vacuum pump
- Fast “plug and play” installation
- Auto-commissioning cycle
- Auto-sleeve cycle
- Inner door lock

- Different models with patented, glove-free sample handling
- Stainless steel body construction with acrylic glass front
- Comfortable sleeve cuffs to permit manipulation of samples
- Separated incubator and working space improve efficiency and ease of use
- Incubator temperature range: ambient + 5 °C to 70 °C (+/- 1 °C at 37 °C)
- Condensate chiller for a condensation-free working space
- Easy to handle air lock for simple transfer of samples
- 1 interior electrical outlet

### BACTRON: Chambers for Anaerobic Applications

- Automatic pressure control provides a mild overpressure
- Internal manometer for a quick, visual check of pressure level to ensure correct handling by user
- Palladium catalyst cartridge improves anaerobic efficiency

### BACTROX: Chamber for Hypoxic Applications

- Independent control of O<sub>2</sub> from 0.5 % to 20 %, and CO<sub>2</sub> from 1.0 % to 20 %, in 0.1 % increments

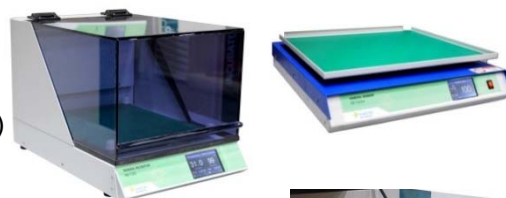
## Shaking Incubators and Orbital Shakers

**N-BIOTEK**  
Leading Biotechnology

- Orbital movement (Ø 22 mm)
- Shaking speed 30 to 300 rpm (± 1 rpm)
- Timer: 1 minute to 48 hours or continuous operation

### Shaking Incubators:

- Clear cover that opens upwards
- Temperature: ambient + 5 °C to 60 °C (± 0,25 °C at 37 °C)
- Automatic shaking stop when door is opened



### Orbital Shakers:

- Unit with **separate remote controller** can be used in incubators with a humidity up to 85 %
- Operation temperature of 4 °C to 60 °C



### Optional: User-friendly and intuitive LCD Touch Screen

- Touch screen for standard, temperature and shaking functions
- Programmable steps for temperature and rpm
- Easy calibration and setting of alarm
- No overshooting of set speed

**Price:** Prices in Euro per unit, excluding VAT.

**Freight charges:** Germany: We charge Euro 20.00 for delivery. Large delivery on a palette: please enquire. Below a net order value of Euro 100.00 an additional charge of Euro 8.00 will apply. Other countries: Please contact us for further information.

**Payment terms:** 30 days net or against pro forma invoice.

Prices are subject to change without notice. Prices supersede all prices in previous documents. No responsibility is taken for the accuracy of the information.