Animal Reproduction Technology
Small Ruminants and Camelids
We need detailed knowledge of reproductive physiology in order to ensure that you are successful in the use of artificial insemination. Veterinarians and agro-scientists specialized in this field therefore, are responsible at Minitube for product development and for consulting with our clients. The technical demands of semen processing and preservation also require knowledge and expertise in other fields, such as electronics, sensorics, mechanics, chemistry, cryobiology and many others. At Minitube, these demands are met by specially trained engineers and scientists.

For product development, our teams of veterinarians and engineers cooperate closely. Together, they offer all the knowledge and experience necessary to guarantee the best possible results.

Minitube offers you specialized training programs, courses and technology transfer. In close cooperation with renowned research institutions we conduct fundamental research concerning assisted reproduction technologies as well as applied research that leads to improved techniques in production, evaluation and conservation of semen and embryos.

Originating in Tiefenbach, Bavaria, Minitube has established its competence over many years in more than 100 different countries all over the world. With several companies, highly-trained local representatives, and multilingual professionals, we keep in contact with the international AI industry. Innovative ideas, modern production techniques and a keen appreciation of product quality are the basic ingredients of our knowledge and your success.

We thank you for your interest and your confidence placed in us.

DR. CHRISTIAN SIMMET
CEO

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www.minitube.com
**Semen Collection**

**Electro ejaculator**

**Electro ejaculator set**, consisting of heavy-duty carrying case, control unit, battery and transformer/charger.
- Digital display and adjustment of the actual value in 0.5 volt steps
- Fully portable with remote control
- Manual adjustable pulse/pause ratio
- Power output with 4 different types of curves enabling balanced setting according to the animal's size and sensitivity
- Power supply: 115 V/60 Hz or 230 V/50 Hz

**Electro ejaculator**  REF. : 11900/0000

**Electro ejaculator probe 1”**  REF. : 11900/0021

**Semen collection set for electro ejaculator**  REF. : 11900/0250
SEMEN COLLECTION

Artificial vagina

For small ruminants

- Rigid rubber casing with valve
- Latex inner liner with roll-up ends
- Rubber bands
- Graduated collection vial in tulip shape, 4 ml
- Warming bag

Artificial vagina, 11 cm  REF. : 11320/0000

For cattle and camelids

AV casing with valve, 30 cm  REF. : 11021/0033

Accessories

Latex inner liner, smooth, for 11320/0000  REF. : 11322/0002
Latex inner liner, smooth, for 11021/0033  REF. : 11022/0002
Latex inner liner, rough, for 11021/0033  REF. : 11022/0005

Semen collection vial, tulip shape, graduated

2 ml  REF. : 11323/0005
4 ml  REF. : 11323/0004
8 ml  REF. : 11023/0016
10 ml  REF. : 11613/0010

Silicone plug for vial 11323/0004  REF. : 11023/1592

Semen collection vial for camelids, 8 ml, double walled, for 11021/0033  REF. : 11023/0017

Silicone plug for the top of vial 11023/0017  REF. : 11023/1591
Silicone plug for the bottom of vial 11023/0017  REF. : 11023/1593

Warming bag  REF. : 11225/0026

Semen collection glove, sperm safe (available in various sizes)  REF. : 11128/0055

Thermometer, up to +100°C, red filling  REF. : 11027/0100
Semen Evaluation

**AndroVision®**

This highly efficient automated system for computerized semen analysis stands out for the integration of the classic CASA analysis with more advanced assays for sperm functionality.

Concentration and motility can be assessed accurately and quickly with up to 1000 cells per field. Morphology assessment can be added to one field, making AndroVision® the perfect tool for an objective and complete semen evaluation. All images and data are stored for later review.

The user interface is straightforward and easy to understand. An analysis report can be generated as a hard copy print or a digitized file. AndroVision® can be upgraded with a number of additional modules. These features and more make AndroVision® the ideal choice for semen assessment in a research and production lab.

**AndroVision® software**
with PC and accessories  
REF. : 12500/0000

**AndroVision® camera**
high speed colour camera  
REF. : 12500/4200
AndroVision® software modules

Morphology and Morphometry
Interactive system for analysis of sperm morphology and morphometry. Identifies sperm in stained as well as unstained samples and measures length and width of the sperm head, head shape and midpiece asymmetry of each single sperm cell (acc. to Krüger). Results can be classified into a large range of morphologic abnormalities.

Module Morphology and Morphometry  REF. : 12500/1300

Viability
Automated count of the percentage of membrane intact sperm, based on a double stain fluorescence assay.

Module Viability*  REF. : 12500/1400

Acrosome Integrity
Automated count of percentage of sperm with damaged acrosome, based on a double stain fluorescence assay.

Module Acrosome Integrity*  REF. : 12500/1600

Mitochondrial Activity
Automated count of percentage of sperm with active mitochondria, based on a double stain fluorescence assay.

Module Mitochondrial Activity*  REF. : 12500/1700

DNA Integrity
Automated reporting of the percentage of sperm with defective DNA based on the halo-technique combined with fluorescent staining.

Module DNA Integrity*  REF. : 12500/1800

* requires fluorescence microscope
**Phase contrast microscope MBL**

Functional microscope for semen analysis with phase achromat objectives 10x, 40x, 100x, heating system with temperature control unit HT 50 with digital temperature display and freely selectable temperature adjustment.

- **Binocular**  
  REF. : 12010/2000

- **Binocular** with ocular colour camera and monitor  
  REF. : 12010/2100

**Semen dyes**

- **Spermac***, semen dye for morphological evaluation,  
  4 x 50 ml  
  REF. : 15405/0000

- **Eosin G** solution for supravital staining,  
  50 ml  
  REF. : 15405/0025

- **Nigrosin** solution for supravital staining,  
  50 ml  
  REF. : 15405/0029

- **Farelly stain** for morphological evaluation, consisting of 3 components, 250 ml each  
  REF. : 15405/0026

*Not recommended for camelid semen

**Microscopy supplies**

- **Microscope slide**, 76 x 26 mm, 50/box  
  REF. : 15400/2400

- **Cover glass**, 18 x 18 mm, 100/box  
  REF. : 15401/0990

- **Immersion oil**, 8 ml  
  REF. : 12000/0101

**Counting chambers (hemocytometers)**

- **Thoma new**  
  REF. : 15150/4771

- **Neubauer improved**  
  REF. : 15152/4421

- **Bürker**  
  REF. : 15153/0000

**Pipettor**

- **Pipettor 10 – 100 µl**  
  REF. : 12425/4810

- **Tips for pipettor**, 1000/bag  
  REF. : 12425/9409
SEMEN EVALUATION

Photometer SDM6

Your benefits

• With programs for the determination of sperm concentration of ram, buck, bull, boar and stallion semen
• Automatic calculation of extender volume and number of doses
• Display of semen concentration in $10^9$ sperm cells/ml
• Optional: integrated printer for printout of ejaculate production data
• Serial and parallel interfaces for data transfer
• Large touch screen, easy to use

Photometer SDM6, for the determination of semen concentration and for dose calculation, with integrated printer  
Ref. : 12300/0006

Photometer SDM6, without printer  
Ref. : 12300/0008

Accessories

Paper for printer  
Ref. : 12300/0311

Macro cuvette, 4 ml, 100/package  
Ref. : 12301/0003

Photometer SDM 1

The SDM 1 is a compact, highly accurate photometer developed for measuring sperm cell concentrations. It can be calibrated for small ruminant species, bovine, canine, equine, and porcine. Cleaning is simple, maintenance is minimal. The semen concentration is displayed in million sperm cells/ml.

• Calibration for ram or buck semen
• Raw semen samples can be used without dilution
• LED light source provides stable output
• Cuvette is securely fixed in the correct measuring position
• Calibration is performed automatically with each sample measurement

Photometer SDM 1 for buck semen  
Ref. : 12300/0104

Photometer SDM 1 for ram semen  
Ref. : 12300/0106

Accessories

Microcuvette for SDM 1, 100/box  
Ref. : 12300/1111

Multispecies Software  
for reprogramming to other species  
Ref. : 12300/0130
# Semen Extenders

## Semen extenders

### AndroMed®
- Egg yolk free medium for frozen and liquid semen of ruminants
- No risk of microbiological contamination
- Easy to prepare, time saving

*AndroMed® 200 ml, for a total of 1000 ml of extender, with antibiotic formula according to EC requirements*

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>REF. : 13503/0200</td>
<td>AndroMed® CSS, One-step 200ml, for a total of 1000 ml of extender</td>
</tr>
<tr>
<td>REF. : 13503/1250</td>
<td>AndroMed® CSS, Two-step, fraction 1 100 ml, for a total of 500 ml extender</td>
</tr>
<tr>
<td>REF. : 13503/1251</td>
<td>AndroMed® CSS, Two-step, fraction 2 200 ml, for a total of 500 ml extender</td>
</tr>
</tbody>
</table>

### Steridyl®
- TRIS based semen freezing extender with sterile egg yolk included
- Easy to prepare, time saving

*Steridyl® 500 ml concentrate, for a total of 1250 ml of extender, sterilised, with antibiotic formula according to EC requirements*

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>REF. : 13500/0260</td>
<td>Steridyl® CSS, One-step 500 ml, for a total of 1000 ml of extender</td>
</tr>
<tr>
<td>REF. : 13500/0280</td>
<td>Steridyl® CSS, Two-step, fraction 1 500 ml, for a total of 1000 ml of extender</td>
</tr>
<tr>
<td>REF. : 13500/0290</td>
<td>Steridyl® CSS, Two-step, fraction 2 500 ml, for a total of 1000 ml of extender</td>
</tr>
<tr>
<td>REF. : 13500/0295</td>
<td>Steridyl® CSS, Two-step, fraction 2 500 ml, for a total of 1000 ml of extender</td>
</tr>
</tbody>
</table>
## SEMEN EXTENDERS

### Triladyl®

Since decades, one of the most successful extenders for bull semen freezing in the world. Used for one-step semen processing at room temperature, it stands for constantly optimal results of your bull population, even when using highly diluted ejaculates.

- **Triladyl®**: 250 g, for a total of 1250 g of extender, with antibiotic formula according to EC requirements  
  **Ref.**: 13500/0250
- **Triladyl® CSS**: 200 g, for a total of 1000 g of extender, without antibiotics  
  **Ref.**: 13500/1200

### Triladyl® CSS

- **Ref.**: 13500/0250

### Biladyl®

The Two-step extender based on the proven Triladyl® formula, according to the CSS-requirements (Certified Semen Services). Consisting of fractions A, B and antibiotic supplement.

- **Biladyl®**, fraction A, 49 g, for a total of 500 g extender  
  **Ref.**: 13500/0004
- **Biladyl®**, fraction B, 250 g, for a total of 750 g extender  
  **Ref.**: 13500/0006

### Antibiotic supplement for One-step extender

Antibiotic formula in powder according to CSS protocol, contains:

- 550 mg Gentamicin
- 110 mg Tylosin
- 330 mg Lincomycin
- 660 mg Spectinomycin

**Ref.**: 13504/9000

### Antibiotic supplement for Two-step extender

Antibiotic formula in powder according to CSS protocol, contains:

- 300 mg Gentamicin
- 60 mg Tylosin
- 180 mg Lincomycin
- 360 mg Spectinomycin

**Ref.**: 13500/0005

### Bovidyl®

Medium for preservation of liquid semen from ruminants, 270 ml. Needs addition of 30 ml egg yolk. With antibiotic formula according to EC requirements. For a total of 300 ml of extender.

**Ref.**: 13501/0150

### OviPlus

**Ref.**: 13610/0025

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*www.minitube.com*
Straw Processing and Freezing

Semen straws 0.25/0.5ml

MiniStraw, 0.25 ml, clear, 2000/bag  REF. : 13407/0010

MediumStraw, 0.5 ml, clear, 2500/bag  REF. : 13408/0010

EcoStraw, 0.25 ml, clear, 2000/bag  REF. : 13407/3010

EcoStraw, 0.5 ml, clear, 2500/bag  REF. : 13408/3010

EcoStraws feature a plug with a shorter inner wick section that absorbs 3 - 4 % fewer sperm cells than the corresponding symmetrical plugs of standard semen straws. They are ideal for overnight equilibration of semen at refrigerated temperatures. EcoStraws are used in exactly the same way as standard semen straws.

Semen straws made by Minitube are available in many different colours, and pre-printed upon request.
AHDR/HDR Printer

Clichés printer for straws

For 0.5 or 0.25 ml straws and Minitubes, with counter. Capacity approx. 5000/3000 straws/hour (AHDR/HDR).

AHDR, automatic printer  REF. : 13142/1000
HDR, manual printer  REF. : 13140/0000

Set of alpha-numerical characters
for 0.5 ml straws and Minitubes  REF. : 13052/0000
for 0.25 ml straws  REF. : 13052/0010

Printing ink ER, 40 ml, black  REF. : 13056/0033
Thinner for ER printing ink, 1000 ml  REF. : 13056/9000
Double stick tape  REF. : 13050/0010

EasyCoder

Thermo transfer printer for straws with automatic straw feeder

Your benefits

- Unmatched neat and clear printing on 0.5 and 0.25 ml straws
- Immediately non-abrasive print
- Prints up to 3 lines per straw, even with barcodes, logos and specific characters
- Control via PC by a clear and user-friendly Minitube software
- Clean and odourless working without ink and solvents
- Very simple handling, only little maintenance required

EasyCoder  REF. : 13038/0000

Colour band for straw printer EasyCoder, black, roll with 200 m  REF. : 13038/0010
STRAW PROCESSING

SFS 133

Semiautomatic filling and sealing machine

- for 0.25 ml straws  
  REF. : 13133/0135
- for 0.5 ml straws  
  REF. : 13133/0133

Low density vacuum pump, 30 - 60 Hg, with manometer and adjustable valve, 230 V/50 Hz  
  REF. : 13133/0267

Loading device, for SFS 133 racks
- 0.25 ml  
  REF. : 13133/0025
- 0.5 ml  
  REF. : 13133/0005

Filling head with 6 nozzles  
  REF. : 13133/1000

Suction head with 6 nozzles  
  REF. : 13133/2000

Silicone tubing for SFS transparent, 3 x 1 mm  
  REF. : 13133/3550

Washer for all filling and suction nozzles, 2000/bag  
  REF. : 13021/3002

Metal sealing ball for 0.5 ml straw  
  REF. : 13400/9900

Metal sealing ball for 0.25 ml straw  
  REF. : 13400/9970

Coloured glass sealing balls available.

MPP UNO

Automatic filling and sealing machine for 0.25 and 0.5 ml straws with ultrasound sealer

- Capacity approx. 4000 straws/hour.
- Power supply: 110 V/60 Hz or 230 V/50 Hz.

MPP UNO, complete  
  REF. : 13017/0000

Your benefits

- Conversion between 0.25 ml straws and 0.5 ml straws in only a few minutes
- Very compact device which requires minor space
- Best hygienic and safety conditions due to completely closed filling and sealing area

Accessories

- Straw hopper  
  REF. : 13018/0006
- Filling nozzle 0.25 ml  
  REF. : 13017/0012
- Suction nozzle 0.25 ml  
  REF. : 13017/0022
- Filling nozzle 0.5 ml  
  REF. : 13017/0017
- Suction nozzle 0.5 ml  
  REF. : 13017/0027
- Washer, 2000/bag  
  REF. : 13021/3002
- Filling tubing, 100/bag  
  REF. : 13021/3800
IceCube 14S - Automatic freezer

Computer controlled freezer, with comfortable data input and automatic recording of the freezing curve.

Technical features

- Temperature range: +40 to -180°C
- Freezing rates: 0.01 to +60°C/min
- Heating rates: 0.01 to +15°C/min
- Temperature measurement via 2 Pt-100 resistance thermometers
- Capacity: approx. 900 straws per freezing cycle

Software for freeze program and control, unlimited storage of programs and processed files, colour graphic display of all temperature curves, wide possibility of parameter settings.

Dimensions: 540 x 420 x 520 mm (l x w x h). 29 kg.

IceCube 14S with connector kit for LN2 pressure container

- with 10" tablet, no PC required  REF. : 16821/3000
- with 12" touch screen monitor  REF. : 16821/2000
to be connected to PC or laptop
- without monitor to be connected to PC or laptop  REF. : 16821/1000

*R Spacer included

Freezing units

Technical details

- Floating rack for straws included
- The distance between straws and liquid nitrogen level can be adjusted with floating rack
- Fits 0.5 ml and 0.25 ml straws
- With high quality styrofoam chest and stainless steel inner box with working tray

For 20 straws  REF. : 15043/0636
For 90 straws  REF. : 15043/0736

Accessories

Loading block for 90 straws rack  REF. : 15043/0738

Additional racks:
  for freezing unit for 20 straws  REF.: 5015043/0600
  for freezing unit for 90 straws  REF.: 5015043/0900

www.minitube.com
Insemination and Pregnancy Detection

Insemination kit for small ruminants

Rugged plastic case contains:

- 1 Electronic thawing unit MT 30/54 (see page 18)
- 50 Universal sheaths for all types of straws, short length for small ruminants
- 1 QuickLock insemination gun, short length for small ruminants
- 1 ReproJelly semen friendly lubricant, 100 ml
- 1 Vaginal speculum for small ruminants, with 50 exchangeable transparent plastic tubes
- 1 MiniCutter
- 1 Thermometer
- 1 Pair of tweezers
- 1 Canister clamp

Insemination kit for small ruminants  REF.: 17350/0100

Components also available individually!
INSEMINATION

Insemination pipettes for camelids

**Long pipette with very flexible tube** for deep intrauterine insemination. Smooth round tip for gentle introduction. Flexible shaft facilitates handling. 1/package, sterilised

- Length: 65 cm  
  REF. : 17209/1265
- Length: 75 cm  
  REF. : 17209/1275

**Flexible stylet** used with insemination pipette and 0.5 ml straws

- For 65 cm pipettes  
  REF. : 17209/1065
- For 75 cm pipettes  
  REF. : 17209/1075

Insemination pipette for small ruminants

Insemination pipette with excentrical tip for intracervical AI under visual control (speculum), 50/bag.

- **Insemination pipette with excentrical tip** can be used with 0.25 ml and 0.5 ml straws, Minitubes and syringe with adapter  
  REF. : 17300/0000
- **Inseminator for small ruminants**, for 0.25/0.5 ml straws and Minitubes. To be used with pipettes with excentrical tip.  
  REF. : 17320/0000

- **Disposable syringe, 5 ml, Luer mount, sterilised**, all plastic, non spermicidal, 100/package  
  REF. : 19801/0005

- **Adapter** for Liquid Semen Pipette, with tubing  
  REF. : 17500/1000
QuickLock and sheaths

QuickLock insemination gun for small ruminants, to be used with Universal sheaths. Suitable for all kinds of straws (0.25 ml, 0.5 ml and Minitubes). For intravaginal AI without speculum. Very handy lock system for sheaths. Secure emptying of straws without backflow.

REF.: 17350/0000

Universal AI Sheath for QuickLock gun for sheep and goat. Round smooth tip, very easy to use. 50/package.

REF.: 17350/0010

Vaginal specula

Vaginal speculum, with battery handle with incorporated lamp, for small ruminants and camelids, total length 240 x 17.3 mm diameter 1

REF.: 17373/0000

Exchangeable transparent plastic tube for speculum 17373/0000, smooth front edge, disposable, length 19 cm, diameter 17.3 mm, 50/package 2

REF.: 17373/0001

Vaginal speculum, duckbill type, total length 200 mm, stainless steel 3

REF.: 17370/772

Disposable speculum for camels, made of cardboard, inside with reflecting aluminium coating, smooth front edge for gentle introduction, inner diameter: 3 cm, length: approx. 43 cm 4

REF.: 17210/0000

LED-light, battery operated (up to 250 h), with clip for fixing 5 length: 96 mm

REF.: 17210/0010

Cytology Brush

Disposable set for collecting endometrial cells for cytology.

Cytology Brush for camels, single packed, sterile, single use, delivered with hygienic cover 6

REF.: 17075/0010
INSEMINATION

Laparoscopic AI equipment

Robertson pipette
For laparoscopic insemination, to be used with Lap AI gun or syringe, non sterile, 10/package  REF. : 23700/2200

Robertson pipette
For donor ewes, FSH stimulated and thick uterine walls  REF. : 23700/2201

Lap AI Gun, for Robertson Pipettes 1
0.25 ml straws  REF. : 23700/2205

Stylet for removal of emptied 0.25 ml straw 2
out of Robertson Pipette  REF. : 23700/2206

Inner catheter for Lap AI Gun 3
for the insemination of bulk semen  REF. : 23700/2207

Laparoscope set for artificial insemination of small ruminants  REF. : 23700/1010

Contains the following components:

Cold-light fountain with anti-fog pump, 400 A cable, 230 VAC, 50/60 Hz  REF. : 23700/1512

2 Trocars 7 mm with blunt tip, consisting of spike and sheath, with multifunction valve. Trocar also separately available  REF. : 23700/1013

Hopkins forward oblique telescope 30°, enlarged view, Ø 6.5 mm, length 35 cm, autoclavable  REF. : 23700/1400

Fibre optic light cable Ø 3.5 mm, length 300 cm  REF. : 23700/1514

Separately available:

CO2 insufflator  REF. : 23700/1450

Light source for endoscopes, portable, including charger and spare battery  REF. : 23700/1517

www.minitube.com
**Cradle for laparoscopic AI in sheep**

Facilitates secure fixation of the sheep during the whole procedure and allows tipping over in oblique position right before AI. **Foldability** and **light weight** allow easy transport and storage.

Dimensions (WxHxD): 1345 x 680 x 560 (Folded: 550 x 310 x 270)

**Thawing Unit MT 30/54**

- Electronic temperature control
- Accuracy: ± 0.2°C
- Power supply: 12 V DC (car battery)

35°C  
37°C  
38°C  
50°C

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>35°C</td>
<td>17044/0035</td>
</tr>
<tr>
<td>37°C</td>
<td>17044/0037</td>
</tr>
<tr>
<td>38°C</td>
<td>17044/0038</td>
</tr>
<tr>
<td>50°C</td>
<td>17044/0050</td>
</tr>
</tbody>
</table>

**Accessories**

- **Converter** for thawing device 12V/220V  
  Reference: 17165/1395
- **Thermometer** for thawing device  
  Reference: 17049/0000

**PBS Blue**

Thaw medium for pellets, marker solution for straws, 20 ml flask  
Reference: 21500/0001

**Lubricant ReproJelly**

Non-spermicidal lubricant, water soluble

- Iso-osmotic and sperm friendly, supports the sperm cell viability
- Batches are tested for sperm compatibility
- Ideal viscosity to better coat gloves, AI equipment and instruments

- **Tube with 100 ml**, resealable  
  Reference: 11907/0100
- **3.0 l canister, without dispenser**  
  Reference: 11907/3000
- **Dispenser for canister**  
  Reference: 11907/3100
PREGNANCY DETECTION

Pregnancy tester

Instrument for diagnosis of pregnancy in small ruminants after 65 days by means of ultrasonic waves. Operated with rechargeable or normal battery. **Very handy, robust and easy to operate.**

Good freedom of movement due to a probe connected with a spiral cable. Complete with carry case, test body, wrist band, contact gel bottle and standard battery.

**Ref.** : 23350/2838

Charger for 100-240 V with rechargeable battery  **Ref.** : 23350/2840

Ultrasound scanner for small ruminants

Portable ultrasound scanner for transabdominal pregnancy detection in sheep and goats. Very robust, battery operated, easy to clean.

Stable carrying case, electronic 3.5 MHz convex probe (70° forward), freeze-function, carrying strap, two rechargeable batteries, battery charger, USB cable to transmit pictures.

**Ultrasound scanner with probe**  **Ref.** : 23500/1000

**Spare battery set** (2 pcs.)  **Ref.** : 5023500/1010

Ultrasound device for camelids

Portable ultrasound scanner for pregnancy detection. Suited for transrectal pregnancy check in camelids. Very robust, battery operated, easy to clean.

With rechargeable battery, power supply carry strap, ReproJelly and heavy duty case. 100-240 V

**Ultrasound device**  **Ref.** : 23500/1005

**Linear Probe 6.5 MHz**  
for rectal pregnancy detection  **Ref.** : 23500/1106

Probes exchangeable. Convex probe available.
Flush media

BoviFlush

Medium for bovine and ovine embryo recovery

A complete formulation containing buffer solution, BSA or PVA and Gentamicin.

- BSA of high protein purity
- No additives required
- Infusion bag with 3-way port configuration

With BSA and antibiotic, 1 litre  REF. : 19982/6001
With PVA and antibiotic, 1 litre  REF. : 19982/6011

CamelFlush

Medium for flushing embryos of camelids

CamelFlush is available in plastic bottles and infusion bags.

With BSA and antibiotic, 1 litre, bag  REF. : 19982/6601
With BSA and antibiotic, 1 litre, bottle  REF. : 19982/6701
With PVA and antibiotic, 1 litre, bag  REF. : 19982/6611
EMBRYO COLLECTION AND TRANSFER

Holding medium

A multiple application medium for:
- Holding in vivo or in vitro derived embryos at room temperature in atmospheric air
- Washing and rinsing embryos
- Loading embryos for transfer to recipients

**BoviHold – Holding medium**
Buffered solution containing Pyruvate, BSA and Antibiotic, 20 ml, vial [Ref.: 19982/6050]

Embryo collection catheters

**For small ruminants**

- **Embryo collection catheter 8 CH,** silicone, 3 ml balloon, 2-way, Foley type [Ref.: 19009/6008]
- **Single connector tubing** [Ref.: 19009/6001]
- **Y-Tubing** [Ref.: 19009/6002]
- **Injection catheter** for embryo flushing medium in surgical recovery [Ref.: 19810/0960]
- **Babcock forceps** for holding the uterine horn in surgical collection and transfer, 28 cm [Ref.: 15010/6024]
- **Tomcat catheter,** disposable, 50/bag [Ref.: 19001/0050]

**For camelids**

- **Lampeter stainless steel tip catheter** with 8 ports, rubber, Luer end, 1/bag, CH 18 [Ref.: 19006/0017]
- **Disposable Y-junction tubing with clamps,** to be used in combination with any catheter and inline filter. Sterilised, 1/bag. Tubing made of very smooth, flexible material. End for filter connection requires no extra adapter. [Ref.: 19011/0100]
- **Mandrin** for flushing catheter, CH 18/20 [Ref.: 19007/0018]

Also available: Silicone catheters in different sizes with Foley or Luer end

Cryopreservation medium

Medium for conventional slow-rate freezing of embryos.
The cryopreservation solution contains a buffered solution with D-glucose, Sodium-pyruvate, BSA and antibiotic.

**BoviFreeze**
with ethylene glycol for conventional freezing and direct transfer after thawing, 5 ml, bottle [Ref.: 19982/6051]
EmSafe and EmGuard - Filters for embryo collection

Your benefits

- Filter mesh cannot get dry as it remains in contact with fluid
- Secure fixation of the lid during collection and easy to open after collection
- An integrated search dish engraved with a grid makes it easy to search and find embryos
- All-in-one filter and search dish
- Excess fluid is controlled and removed through outlet tubing with attached thumb clamp
- Connection to all types of Y-tubing is possible

EmSafe

EmSafe is ideal for both large and small embryos. The filter system automatically holds a minimum level of 60 ml rinsing fluid in the dish. An angled filter mesh provides an optimal flow-through rate and the air vent in the lid is secured by a filter.

EmSafe filter 1  
REF. : 19010/6000

EmGuard

Due to its shallow design, the EmGuard filter system is perfectly suited for use with all microscopes even when the working distance is limited. Embryos are easily found with the aid of the highly visible grid.

EmGuard filter 2  
REF. : 19010/1000

Embryo culture dish

Embryo culture dish, with lid, sterilised, 5 wells, rounded well edges, mouse embryo batch tested

4/bag, 100/box  
REF. : 19021/0005
EMBRYO COLLECTION AND TRANSFER

Straws

0.25 ml straw, clear, sterilised, 10/package

- clear  
  REF. : 19042/0010
- yellow  
  REF. : 19042/1010
- with sealing balls  
  REF. : 19041/0010

0.25 ml straw, clear, sterilised, 10/package, with ID rod seal in different colours:

- white  
  REF. : 19040/0010
- beige  
  REF. : 19040/0011
- light yellow  
  REF. : 19040/0012
- light blue  
  REF. : 19040/0013
- red  
  REF. : 19040/0014
- pink  
  REF. : 19040/0015
- grey  
  REF. : 19040/0016
- light green  
  REF. : 19040/0018
- dark yellow  
  REF. : 19040/0020

Also available:
0.25 ml straw, yellow-transparent with beige or light yellow ID-rod

Neopor transport box

Neopor transport box  
for shipping embryos at 5°C  
REF. : 17229/0005

Transport vial with secure snap cap  
round bottom, 5 ml  
REF. : 19180/5006
Minitube offers a variety of seminars and training opportunities in small ruminant reproduction techniques. These are also applicable for deer.

The seminars begin with a get-together meeting to discuss each participant’s experience and practical expertise. A comprehensive theory presentation is followed by hands-on lessons during which the trainees repeatedly perform all steps under the supervision of the trainer. Minitube training sessions always offer many useful troubleshooting measures. The participants benefit greatly from a “learning by doing” approach.

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### Laparoscopic artificial insemination (3-5 days)

**Theory:**
- Physiology (heat, ovulation, fertilization...)
- Synchronization protocols
- Artificial insemination (semen handling, thawing and analysis, timing and frequency of AI, working with a range of preserved semen presentations)
- Preparation for laparoscopic AI (restraint and sedation of animals; care, maintenance and cleaning of equipment)
- Technique of laparoscopic AI (including hygienic aspects)
- Optimization (animal welfare and care, setup of workplace, manpower, ...)  
- Troubleshooting

**Hands-on lessons:**
- Demonstration of laparoscopic AI
- Trainees perform all steps repeatedly under supervision of trainer

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### Semen collection, evaluation and freezing (2 days)

**Theory:**
- Physiology (anatomy, spermatogenic cycle, ejaculate composition)
- Semen collection (instruments and techniques)
- Semen evaluation (criteria and instruments)
- Semen extenders (composition and use)
- Cryopreservation of semen (semen extenders, cryologic damage, freezing protocols, instruments, storage and management of semen)
- Preparation for semen collection, evaluation, processing and freezing (check lists)
- Optimization (animal welfare and care, setup of workplace, manpower)
- Troubleshooting

**Hands-on lessons:**
- Demonstration of all different steps of the process
- Trainees perform all steps repeatedly under supervision of trainer

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### Embryo flushing and transfer (3-5 days)

**Theory:**
- Physiology (heat, ovulation, fertilization, early embryonic development)
- Hormone treatments (synchronization, superovulation)
- Insemination (timing, frequency, effects on embryo recovery rates)
- Preparation for ET (including check lists)
- Donor management
-Recipient selection and management
- Restraint and sedation of animals
- Care, maintenance and cleaning of equipment
- Technique of uterine flushing (including hygienic aspects)
- Embryo handling (media, lab equipment, critical steps of work)
- Optimization (animal welfare and care, setup of workplace, manpower)
- Troubleshooting

**Hands-on lessons:**
- Demonstration of laparoscopic ET
- Trainees perform all steps repeatedly under supervision of trainer

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### Embryology

**Theory:**
- Physiology (ovulation, fertilization, early embryonic development)
- Embryo handling (media, lab equipment, critical steps of the process)
- Troubleshooting

**Hands-on lessons:**
- Searching and grading of embryos
- Embryo preparation for fresh/chill & thaw transfer
- Embryo splitting
- Embryo freezing
Minitüb is an ISO 9001:2015 certified company.