Animal Reproduction Technology
Equine
Innovative ideas, modern production techniques and a keen appreciation of product quality are the basic ingredients of our knowledge and your success.

Contents

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collection of stallion semen</td>
<td>04 – 06</td>
</tr>
<tr>
<td>Microscopy and volume measurement</td>
<td>07</td>
</tr>
<tr>
<td>AndroVision®</td>
<td>08</td>
</tr>
<tr>
<td>Photometry</td>
<td>09</td>
</tr>
<tr>
<td>Minitube stallion semen extenders</td>
<td>10 – 11</td>
</tr>
<tr>
<td>Processing of stallion semen</td>
<td>12 – 13</td>
</tr>
<tr>
<td>Transport of chilled semen</td>
<td>14</td>
</tr>
<tr>
<td>Insemination of mares</td>
<td>15 – 18</td>
</tr>
<tr>
<td>Sterilisation</td>
<td>19</td>
</tr>
<tr>
<td>Filling and sealing of straws</td>
<td>20</td>
</tr>
<tr>
<td>EasyCoder printer for semen straws</td>
<td>21</td>
</tr>
<tr>
<td>Freezing of stallion semen</td>
<td>22 – 25</td>
</tr>
<tr>
<td>Equine embryo transfer</td>
<td>26 – 29</td>
</tr>
</tbody>
</table>

www.minitube.de
WORLD WIDE ACTIVITIES

Minitube International AG  
Phone: +49 8709 9229 0  
E-Mail: minitube@minitube-international.com

Minitüb, Germany  
Phone: +49 8709 9229 0  
E-Mail: minitube@minitube.de

Minitub Ibérica  
Phone: +34 977 845 397  
E-Mail: info@minitub-iberica.com

Minitube Central Europe  
Phone: +421 377 877 915  
E-Mail: mtce@minitube.sk

Minitub Chile  
Phone: +56 22 2478475  
E-Mail: minitub@minitubchile.cl

Minitub do Brasil  
Phone: +55 51 3222 7876  
E-Mail: minitub@minitubchile.cl

Minitube Australia  
Phone: +61 3 5342 8688  
E-Mail: info@minitube.com.au

Minitube Indonesia  
Phone: +62 21 7591 75 69/94  
E-Mail: zulkifli@minitube-indonesia.com

Minitube China  
Phone: +86 10 8240 3857  
E-Mail: info@minitube.com.cn

Mexitube Alemania  
Phone: +52 442 246 73 46/47  
E-Mail: info@mexitube.mx

Minitube India  
Phone: +91 87 5006 9501  
E-Mail: info@minitube-india.com

Minitube is a registered trademark of Minitüb GmbH, Germany.
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 specialised in this field therefore, are responsible at Minitüb 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 Minitüb, 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 International 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, Minitüb 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 handling exports, 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
Hannover artificial vagina

Equine artificial vagina Hannover with valve, inner liner (100 cm), 3 rubber rings, leather handle

REF. : 11220/0145

Accessories

Inner liner (1) for model Hannover, rubber, with roll-up ends, sterilizable

long version. 100 cm
REF. : 11222/0002
short version. 70 cm
REF. : 11222/0003

Disposable inner liner (2), width approx. 21 cm, roll with approx. 200 m; „sensitive“: smooth and resistant material
REF. : 11222/0120

Warming bag (3) for collection glass, protects the semen from low temperature and UV radiation
REF. : 11225/0026

Rubber band (4) for model Hannover
REF. : 11222/0001

Small valve (5) for model Hannover
REF. : 11222/0005

Disposable inner liner, fits model Hannover/Colorado with built-in filter, 10/package (not shown)
REF. : 11232/0420

Semen collection bottle (6), 200 ml, sterilizable plastic, 100/package
REF. : 11231/0200

Coupling nut for 200 ml semen bottle, 25/package (not shown)
REF. : 11231/0301

Leather handle for model Hannover
REF. : 11222/0008

Missouri artificial vagina

Equine artificial vagina Missouri, double latex liner with valve and leather casing, adapter and collection bottle, length: approx. 55 cm
REF. : 11245/0000

Accessories

Disposable inner liner „AV-Liner“

With built-in filter and collection pouch, for model Missouri (no collection bottle needed), 10/package
REF. : 11245/0420

without filter, for model Missouri, 25/package (without illustration)
REF. : 11245/0450

without filter, fits models Hannover, Colorado and Missouri, 10/package (without illustration)
REF. : 11232/0440
COLLECTION OF STALLION SEMEN

Colorado artificial vagina

Equine artificial vagina Colorado, complete with 2 inner rubber liners (tubular and conical), 10 rubber bands, 2 clamps, 25 disposable inner liners, 25 semen bottles, 25 coupling nuts, 25 nylon filters and warming bag

REF. : 11230/0000

Accessories

Disposable inner liner (1), plastic, width 30 cm, roll with approx. 200 m; „sensitive”: smooth and resistant material

REF. : 11232/0030

Disposable inner liner Colorado (2), 25/package

REF. : 11232/0110

Disposable inner liner Colorado (3), AV-shaped, 25/package, blue

REF. : 11232/0101

Semen collection bottle Colorado (4), 200 ml, sterilised plastic, 100/package

REF. : 11231/0200

Coupling nut for 200 ml semen bottle, 100/package (without illustration)

REF. : 11231/0301

Semen filter Colorado (5), nylon, fits Colorado collection bottle, 25/package

REF. : 11231/0400

Accessories for semen collection

Vaseline, 1000 g

REF. : 11905/0100

Lubricating jelly Bengen, 1 l, water soluble

REF. : 11906/1000

Semen filter, non woven, 150 x 60 mm, 100/package

REF. : 11245/3100

Equine semen filter pouch, plastic, 10/package

REF. : 11260/1000

Thermometer for artificial vagina,

Bimetal, nonbreakable, 0-100°C

REF. : 11027/0000

Mercury, 0-100°C, graduation 0.1°C

REF. : 11027/0100

Mercury, 0-200°C, graduation 0.1°C

REF. : 11027/0200

Semen collection glove, disposable, non spermicidal, different sizes (M/L/XL), 100/box

REF. : 11128/0055

Warming bag (6/7),

Small, for 200 ml collection bottle

REF. : 11225/0026

Large, blue

REF. : 11231/0185

Rubber inner liner for Colorado artificial vagina (8), tapered end for connection to the bottle

flared front end

REF. : 11231/0102

straight form

REF. : 11231/0101

round form

REF. : 11231/0201

Rubber inner liner tubular, flared ends (not shown)

REF. : 11231/0103
Hannover phantom for stallions

Adjustable in height and inclination, covered with reinforced synthetic material coating, well padded, contoured body style, includes bite belt. Size of the phantom fits for all breeds:
Body: 200 x 60 x 55 cm (W x H x D)
Height of the dummy: 1.30 m to approx. 1.70 m

Hannover phantom with hydraulic height adjustment of both legs. Hydraulic height adjustment ensures low fatigue operation. Both feet can be lifted or lowered about 40 cm either individually or together by means of a hand pump.

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

3.0 l canister, without dispenser

Dispenser for canister

Accessories

Cover for phantom, synthetic material, collection side closed, with belts for attachment

Leather blanket for phantom for stallions, collection side closed, with belts for attachment

Bite belt

Stretch foil for protection of phantom, length 300 m

COLLECTION OF STALLION SEMEN
Phase contrast microscope CX 31

Technical features

- Infinity optic system: sharp images over the complete field
- Phase achromatic optics with universal condenser
- Binocular
- Heated original microscope stage with temperature control unit HT 200 with additional warming plate and two digital temperature displays
- Temperature freely selectable
- Ergonomic design
- Phase achromatic objectives
- 6 V/30 W halogen light

with objectives 10x, 20x, 40x  REF. : 12004/0331

with phototube (trinocular), with objectives 10x, 20x, 40x  REF. : 12004/0631

Phase contrast microscope MBL 2000

Functional microscope for semen analysis with phase achromatic 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

With ocular video camera and monitor  REF. : 12010/2100

Semen dyes

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

Farelly stain for morphological evaluation, 3 x 250 ml  REF. : 15405/0026

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

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

Laboratory scale

Precision scale for the determination of the ejaculate volume, weighing range max. 2000 g, resolution 0.1 g, weighing pan 130 x 130 mm  REF. : 14295/0444
Integrated sperm analysis

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 as well as sperm integrity and viability can be assessed accurately and quickly with up to 1000 cells per field, making AndroVision® the perfect tool for the 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. 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 velocity colour camera
REF. : 12500/4200

AndroVision® software modules

Morphology and morphometry:
Interactive, self learning system for analysis of sperm morphology and morphometry (Krüger). Determines length and width of the sperm head, head shape and the angle of tail insertion. Sperms are classified into morphologic abnormalities.

AndroVision® software module:
Morphology and morphometry
REF. : 12500/1300

Membrane integrity:
Automated count of the percentage of membrane intact sperm, based on a double stain fluorescence.

AndroVision® software module:
Membrane integrity*
REF. : 12500/1400

Acrosome integrity:
Automated count of sperm with damaged acrosome, based on a triple stain fluorescence.

AndroVision® software module:
Acrosome integrity*
REF. : 12500/1600

* requires fluorescence microscope
**PHOTOMETRY**

### Photometer SDM6

**Your benefits**

- Touch screen operated, large display
- Programs for the determination of sperm concentration of stallion, bull, boar, ram and buck semen
- Automatic calculation of extender volume and number of doses
- Display of semen concentration in 10⁹ sperm cells/ml
- Optional: integrated printer for printout of production data of ejaculate
- Serial and parallel interfaces for data transfer

### Technical features

- Spectral range: 340-578 nm
- Filter: 546 nm
- Halogen lamp
- Use of 10 mm macro cuvettes
- Analysis time: 2 seconds/sample
- Power supply: 230 V/50 Hz or 110 V/60 Hz

**Photometer SDM6** for 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

- **NaCl solution, 0.9 %, 1 l**  
  **Ref.**: 12301/4667

- **Dispenser 0.5-5 ml for NaCl solution**  
  **Ref.**: 12428/1815

- **Pipette 10-100 µl, with digital display**  
  **Ref.**: 12425/4810

- **Pipette tip yellow, 1000/package**  
  **Ref.**: 12425/9409

- **Automatic diluter-dispenser** for precise sample preparation and concentration measurement. Use of disposable syringes for semen sampling. Power supply: 110-220 V  
  **Ref.**: 12421/0503

---

### Photometer SDM 1

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

**Photometer SDM 1**  
**Ref.**: 12300/0101

### Accessory

- **Multispecies software** for reprogramming to other species  
  **Ref.**: 12300/0130

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

---

www.minitube.de
MINITUBE STALLION SEMEN EXTENDERS
CHILLED SEMEN PROCESSING

**EquiPlus**
Balanced medium with specific purified caseinates for preservation of sperm activity up to 72 hours.
- **Powder for 1 l, with antibiotics**  
  Ref. : 13570/0202
- **Powder for 1 l, without antibiotics**  
  Ref. : 13570/0201
- **Powder for 100 ml, with antibiotics**  
  Ref. : 13570/0210
- **Powder for 100 ml, without antibiotics**  
  Ref. : 13570/0240
- **Liquid, 100 ml, with antibiotics**  
  Ref. : 13570/0301
- **Liquid, 200 ml, with antibiotics and fungicide**  
  Ref. : 13570/0253

**Gent**
for fresh semen, with egg yolk and antibiotics, ready to use
- **45 ml**  
  Ref. : 13571/0045
- **100 ml**  
  Ref. : 13571/0100

**AndroMed®-E**
Liquid semen extender without animal proteins. Contains egg yolk substitutes and antibiotics. 25 ml concentrate for 125 ml diluent
Ref. : 13573/0020

**AndroColl® Equine**
Centrifugation with AndroColl® Equine improves the quality of equine ejaculates by separating the normal, motile sperm population from poor quality spermatozoa and bacteria.
- **250 ml**  
  Ref. : 13580/0005

**CushionFluid**
for gentle centrifugation of stallion spermatozoa. Assures a higher yield of sperm cells as compared to standard centrifugation.
- **100 ml**  
  Ref. : 13580/0001

**Centrifugation medium**
Powder for 1 l transparent EDTA glucose solution  
Ref. : 13565/0001

**Water for semen extenders**
Bidistilled, sterilised, pyrogen-free
- **1 l**  
  Ref. : 13570/1000
- **100 ml**  
  Ref. : 13570/1100

Miniteube extenders are produced according to highest quality standards. All components are from constantly excellent, controlled sources. Each extender batch is tested for its chemical, microbiological, physical and biological properties. Certificates are available upon request.
MINITUBE STALLION SEMEN EXTENDERS
CRYOPRESERVATION OF SEMEN

EquiPlus Freeze

Media for the cryopreservation of stallion semen

Your Benefits

- Ready to use and easy to handle
- Not necessary to add pure water
- Can be transported at ambient temperatures up to +25°C
- Available as 1-step (filling at ambient temperature) or 2-step type (filling at 5°C)

EquiPlus Freeze 1-step with egg yolk
Two liquid components: 95 ml medium and 5 ml egg yolk-glycerol mixture

REF. : 13570/0410

EquiPlus Freeze 1-step without egg yolk
One liquid component: Medium with glycerol. Addition of 2 ml freshly filtered egg yolk by the user

REF. : 13570/0420

EquiPlus Freeze 2-step with egg yolk
consists of three fractions:
2. Component B: EquiPlus Freeze: liquid medium. The egg yolk-glycerol component is added before using.
3. Component C: Egg yolk-glycerol mixture.

REF. : 13570/0510

EquiPlus Freeze 2-step without egg yolk
consists of two liquid fractions:
2. Component B: EquiPlus Freeze contains glycerol: the operator adds 4 ml of fresh egg yolk before using.

REF. : 13570/0520

Gent extender

Freezing extender with egg yolk, glycerol and antibiotics, ready to use

45 ml

REF. : 13571/1045
PROCESSING OF STALLION SEMEN

**Water bath**
Electronic temperature control, stainless steel, with grid and lid

- **7 liters**, inner dimensions: 240 x 210 x 140 mm (W x H x D)  
  **REF.**: 14078/0001
- **10 liters**, inner dimensions: 350 x 210 x 140 mm (W x H x D)  
  **REF.**: 14079/0001

Power supply: 115 V/60 Hz or 230 V/50 Hz

**Rolling mixer RM5**
for gentle, constant homogenization of semen doses in tubes. Appropriate for use inside the refrigerator.
Dimensions: 430 x 180 mm (W x H)

**Centrifuge**
with swing-out rotor for 4 x 100 ml, complete with buckets and 100 ml glass vials. Maximum rotations: 3900 per minute, LCD-display, speed displayed in rpm and g (gravitational force or rcf)

**Shaker Vibramax**
Platform with two fixation devices and non-slip rubber pad, includes timer
Shaking frequency: 150–1350 cycles/min
Area of platform: 220 x 220 mm
PROCESSING OF STALLION SEMEN

Glass ware

Measuring pipettes, graduated cylinders, beakers, dispensers, test tubes, Erlenmeyer flasks etc.

Please ask for a detailed list of our lab glass ware!

Plastic vials

Plastic vial with graduation and screw cap.

30 ml  REF.  : 17231/0030
50 ml  REF.  : 17220/0017
Sterile, 13 ml, with cap  REF.  : 17230/6001
Plastic vial, 13 ml, round bottom  REF.  : 17230/6000

Screw cap for plastic vial, 13 ml

red  REF.  : 17230/6055
blue  REF.  : 17230/6056
green  REF.  : 17230/6058
white  REF.  : 17230/6054
violet  REF.  : 17230/6057
yellow  REF.  : 17230/6059

Rack for 20 plastic vials 12/13 ml, acrylic glass  REF.  : 17230/9384
Rack for 20 plastic vials 30 ml, acrylic glass  REF.  : 17231/9384
Rack for 24 test vials of 18 mm, stainless steel, with numbers  REF.  : 14076/0005

Sterile bags

with incorporated wire and write-on tag, 100/package

Volume 60 ml  REF.  : 17224/0250
Volume 120 ml  REF.  : 17224/0500
Volume 350 ml  REF.  : 17224/1000

Disposable syringes

all plastic, sterilised

10 ml, 100/package  REF.  : 19801/0010
20 ml, 100/package  REF.  : 19801/0020
30 ml, 500/package  REF.  : 19801/0063
50 ml, 300/package  REF.  : 19801/0060
TRANSPORT OF CHILLED SEMEN

**EQUITAINER**

### Your benefits

- A world-wide proven system for cooling, storage and transport of fresh stallion semen
- The warm semen is automatically and gently cooled down to the ideal storage temperature within 6 to 10 hours
- The desired temperature is reliably maintained for about 70 hours
- Very high level of protection against potential x-ray induced damage of the enclosed semen sample

**EQUITAINER cup style**
Complete with cup-style isothermalizer, sterilised plastic cup with lid, 2 ballast bags and 2 coolant cans  
**REF.** : 17220/0010

**EQUITAINER tube style**
Complete with tube-style isothermalizer, to fit two 50 ml tubes, 6 x 50 ml tubes and 2 coolant cans  
**REF.** : 17220/0015

### Accessories

- Coolant can (1)  
  **REF.** : 17221/0120
- Thermo bag (2)  
  **REF.** : 17221/0130
- Isothermalizer cup style (3) for 240 ml cup  
  **REF.** : 17220/0011
- Isothermalizer tube style (4)  
  for two 50 ml tubes  
  **REF.** : 17220/0016
- Inner plastic cup (5), 240 ml, graduated, with lid  
  **REF.** : 17221/0240
- 50 ml tubes (6)  
  **REF.** : 17220/0017

### Neopor transport box

Mininthe transport box, made of highly insulating Neopor, complete with two ice-packs, two syringes (20 ml) and outer shipping carton, holding optimal temperature for appr. 45 hours  
**REF.** : 17229/0002
**Universal pipettes:**

**Your benefits**

- Suitable for liquid and frozen-thawed semen in straws
- Smooth round tip for gentle introduction
- Flexible shaft facilitates handling
- Precision tooled tip with inner cone for 0.5 ml straws to allow direct position of semen into the uterus and to ensure 100% semen delivery
- The reload system: if used with the A.I. stylet for 0.5 ml straws, the same pipette can be reloaded with consecutive straws in situ
- Finger handle with adapter to fit syringe and macrotube straw

Length: 57 cm
5/package, sterilised
REF.: 17209/0005

1/package, sterilised
REF.: 17209/0001

**Long pipette** with very flexible shaft for deep intrauterine insemination.

Length: 65 cm
5/package, sterilised
REF.: 17209/1165

1/package, sterilised
REF.: 17209/1265

Length: 75 cm
5/package, sterilised
REF.: 17209/1175

1/package, sterilised
REF.: 17209/1275

**Deep intrauterine insemination pipette with inner catheter**

For deep intrauterine insemination with small volumes of liquid semen, if straws can not be used. The pipette is provided with an inner catheter to reduce the volume of the channel where the semen has to pass through.

Length: 65 cm
5/package, sterilised
REF.: 17207/1165

1/package, sterilised
REF.: 17207/1265

Length: 75 cm
5/package, sterilised
REF.: 17207/1175

1/package, sterilised
REF.: 17207/1275
INSEMINATION OF MARES

Deep intrauterine kit

includes deep intrauterine universal pipette with inner catheter, 5 ml syringe, supersensitive glove, sterilised.

Length: 65 cm  REF. : 17207/2065
Length: 75 cm  REF. : 17207/2075

Stylet for insemination of frozen semen

With Universal Pipette plus stylet, semen in 0.5 ml straws is directly placed into the uterus, ensuring 100% semen delivery. The stylet is made of stainless steel and is provided with 2 knobs to pull out empty straws, thus the same pipette can be reloaded several times.

Stylet for pipettes

Flexible stylet for deep intrauterine or transcervical insemination with 0.5 ml straws and 2 knobs for pulling out empty straws.

Length: 57 cm  REF. : 17209/1057
Length: 65 cm  REF. : 17209/1065
Length: 75 cm  REF. : 17209/1075

Insemination pipettes for liquid semen

(without illustration)

Length: 60 cm, rounded tip,
25/bag, fits luer syringe  REF. : 17209/2000

With tubing, 1/bag, sterilised  REF. : 17209/2210

Length: 65 cm, big diameter,
25/bag, fits luer syringe  REF. : 19290/1105

Hygienic sheath

Disposable sheath to protect ET or AI pipette during uterine passage, length: 62.5 cm (70/roll)  REF. : 17209/5070

www.minitube.de
Uterus culture swab
consists of introduction pipette with pre-perforated cap for sampling without risk of contamination. Predetermined breaking point of the sample-protecting sheath. Includes two closing caps for transport of the swab to the lab. Swab may be inserted directly into AMIES transport medium to avoid dehydration of the sample. Individually packaged and gamma irradiated.

Swab with AMIES transport medium  REF. : 17214/2951
Swab without transport medium  REF. : 17214/2950

Cytology brush
for picking up cells of the uterus of mares to perform cytology smears for immediate evaluation.

REF. : 17214/2960

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

REF. : 17210/0000

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

REF. : 17210/0010

Metal case with lid and handles for sterilisation and transport of speculum and cervical forceps, 560 x 230 x 120 mm (W x H x D)

REF. : 17215/0149

Polansky speculum  REF. : 17210/4200

Cervical forceps according to Götze with lamp, 54 cm  REF. : 17212/0055
without lamp  REF. : 17212/0054

Biopsy forceps, 66 cm length (not shown)  REF. : 17214/5066
INSEMINATION OF MARES

**Thawing devices**

**MT 30/54**
- Electronic temperature control
- Central, built-in thawing chamber with lift
- Temperature setting: +38°C, also available with 35°C, 37°C and 50°C
- LEDs for indicating the activation of heating cycle and temperature
- Accuracy: ±0.2°C
- Power supply: 12 V DC (car battery)

*REF.* : 17044/0038

**Geysir 70**
- Free temperature setting: up to 75°C
- 12 different time settings preprogrammed
- Straw is automatically thrown out after thawing

*REF.* : 17043/7000

**Accessories**

**Transformer for thawing device MT**
for 12 V/220 V
*REF.* : 17165/1395

**Transformer for thawing device Geysir 70**
*REF.* : 17165/1397

**Insemination gloves**

**Sensitive (1)**
green, 5 finger, shoulder length, 100/box
*REF.* : 17080/0015

**Super-sensitive (2)**
transparent, 100/box
*REF.* : 17080/0050

**Single packed**
sterile, 50/package
*REF.* : 17080/0250

**Colostrum refractometer**

Determines the amount of immunoglobulin in the mare colostrum to ensure sufficient supply for the new born foal. Colostrum of good quality should be frozen for emergency use. Only one drop of colostrum is required for testing. No batteries, no consumables, easy handling.

*REF.* : 24400/0150

www.minitube.de
STERILISATION

Steriliser STERIVAR

Low pressure steriliser for artificial vaginas and accessories, made of stainless steel, double wall with insulation, with pressure safety valve, timer, water drain, protection against overheating and insert grid

Technical features

- Temperature range: up to +100°C
- Pressure: max. 0.02 bar
- Inside dimensions: Ø approx. 750 x 400 mm
- Power supply: 230 V/50 Hz
- Power consumption: 3500 W

Accessory

Roller base for STERIVAR

Warming cabinet

for warming and sterilisation.
Temperature range: +30°C to +220°C. 230 V 50/60 Hz

Various sizes available.
(Dimensions inside, W x H x D)

32 l, 400 x 320 x 250 mm, 44 kg
53 l, 400 x 400 x 330 mm, 55 kg
108 l, 560 x 480 x 250 mm, 72 kg
256 l, 640 x 800 x 500 mm, 96 kg

www.minitube.de
FILLING & SEALING OF STRAWS

MPP Uno

Automatic filling and sealing machine for 0.25 and 0.5 ml straws

Your benefits

- Sealing and filling of one straw per cycle
- Capacity of the exchangeable hopper: approx. 1300 straws 0.5 ml
- Compact device, low space requirement, integrated vacuum pump and pressure controller; ultrasound generator integrated in external casing, mounting at a distance of up to 2.5 m possible
- Best hygienic and safety conditions due to a closed filling and sealing area
- Also suitable for 0.25 ml straws (very easy exchange)

MPP Uno, complete REF. : 13017/0000

Technical features

- Capacity: approx. 4000 straws/hour
- No wearing parts. Very fast and easy cleaning
- Machine dimensions: 460 x 320 x 410 mm (W x H x D)
  + ultrasound generator
- Power supply: 110 V/60 Hz or 230 V/50 Hz

Accessories

Exchangeable straw hopper REF. : 13017/0005
Filling nozzle 0.5 ml REF. : 13017/0017
Suction nozzle 0.5 ml REF. : 13017/0027
Washer, 5000/bag REF. : 13021/3001
Filling tubing, 100/bag REF. : 13021/3800
Semen cone, 200 ml, 100/bag REF. : 13018/0100

Semiautomatic filling and sealing System SFS 133

for 0.5 ml straws. The straws are filled and sealed 6 by 6. Safe and hygienic sealing system with beads. The air bubble is created automatically.
Output: approx. 2000/hour

Vacuum pump with adjustable valve and manometer REF. : 13133/0267
Loading block with rack and 10 magazines for 36 straws each REF. : 13133/0005

Accessories

Sealing beads, glass (various colours) REF. : 13400/0XXX
Sealing beads, metal REF. : 13400/9900
EasyCoder

Printing of straws without ink

**Your benefits**

- Unmatched neat and clear printing on 0.5 and 0.25 ml straws
- Up to 3 lines with a total of about 200 characters, even on Ministraws
- Printing of barcode signs, logos and specific characters
- Immediately non-abrasive print
- Control via PC by a clear and user-friendly Minitube software
- Sequential numbers can be printed on straws
- Adjustable character fonts and graduations from micro to macro
- Freely eligible number of lines and of printing positions
- Clean and odourless working without ink and solvents
- Easy handling, little maintenance required
- Easy and quick conversion between different straw sizes

**EasyCoder printer, complete**

REF. : 13038/0000

**EasyCoder software upgrade**

REF. : 18800/0001

**Technical features**

- Thermal transfer printer with automatic straw supply
- Output: 3600 straws per hour
- Windows based Minitube software with data base for storing names and numbers
- Data transfer by serial port or USB adapter (included)
- Individual composition of printing lines possible; different configurations can be stored in memory
- Dimensions (W x H x D): 690 x 370 x 310 mm (PC not included)
- Power supply: 110-230 V AC, 50/60 Hz

**Accessories**

**Color ribbon for straw printer EasyCoder**

- black
  REF. : 13038/0010
- gold
  REF. : 13038/0012
- red
  REF. : 13038/0015
- silver
  REF. : 13038/0017

www.minitube.de
**IceCube**

*IceCube 14S*: 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
- Display accuracy: 0.01°C
- Temperature measurement via 2 Pt-100 resistance thermometers
- Capacity: approx. 900 x 0.5 ml straws per freezing cycle

Software for freezing programming and control, unlimited storage of programs and processed files, color graphic display of all temperature curves, wide possibility of parameter settings.

Dimensions: 570 x 500 x 520 mm (W x H x D), weight: 29 kg

*IceCube 14S with 12" touch screen monitor and connector kit to be connected to computer and LN₂ pressure container*  
**REF.: 16821/2000**

*IceCube 14S* without monitor, with connector kit to be connected to computer and LN₂ pressure container  
**REF.: 16821/1000**

**Accessories**

- **Rack** for Icecube 14S (1), for 36 straws  
  **REF.: 16821/5036**
- **Loading Device**  
  **REF.: 16821/5037**
- **Handling rack** for Icecube 14S (2)  
  **REF.: 16821/5030**
- **Spacer** for IceCube (not shown)  
  **REF.: 16821/5018**
- **Liquid Nitrogen pressure container**  
  for IceCube 14S, 60 l  
  **REF.: 16820/1900**
- **Roller base for LN₂ pressure container**  
  **REF.: 16501/0204**

**Larger alternative:**

*IceCube 14M*

Capacity: approx. 2300 x 0.5 ml straws

*IceCube 14M without monitor*  
**REF.: 16820/6000**

*IceCube 14M with touch monitor*  
**REF.: 16820/7000**

Please ask for Embryo Freezing Equipment for the IceCube!
FREEZING OF STALLION SEMEN

Freezing units

The freezing units are compact and easy to handle. They are made of a styrofoam box of high quality, an inner container out of stainless steel and a floating rack. The stainless steel container is filled with liquid nitrogen. The rack keeps the needed distance between 0.5 ml or 0.25 ml straws during the first down phase, while it floats on liquid nitrogen. After that, the straws get manually immersed into the nitrogen. The freezing units are an easy but robust and effective solution for standard freezing in nitrogen vapour.

Technical details

- The distance between straws and liquid nitrogen level can be adjusted
- Fits 0.5 ml and 0.25 ml straws
- Low nitrogen consumption
- With high quality styrofoam chest and stainless steel inner box with working tray
- Transportable

For 20 straws  REF. : 15043/0636

For 90 straws  REF. : 15043/0736

Accessories

Loading block for 90 straws floating rack (without illustration)  REF. : 15043/0738

Additional rack for freezing unit for 20 straws  REF. : 5015043/0600
for freezing unit for 90 straws  REF. : 5015043/0900
**FREEZING OF STALLION SEMEN**

### Goblets
Plastic containers for the storage of straws, available in different sizes and colors:

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Color</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1 mm</td>
<td>white</td>
<td>REF. 16965/6071</td>
</tr>
<tr>
<td>10 mm</td>
<td>white</td>
<td>REF. 16912/0133</td>
</tr>
<tr>
<td>13 mm</td>
<td>white</td>
<td>REF. 16913/0133</td>
</tr>
<tr>
<td>13 mm</td>
<td>blue</td>
<td>REF. 16913/1133</td>
</tr>
<tr>
<td>13 mm</td>
<td>red</td>
<td>REF. 16913/3133</td>
</tr>
<tr>
<td>13 mm</td>
<td>pistachio</td>
<td>REF. 16913/4133</td>
</tr>
<tr>
<td>13 mm</td>
<td>yellow</td>
<td>REF. 16913/5133</td>
</tr>
<tr>
<td>35 mm</td>
<td>white</td>
<td>REF. 16935/0135</td>
</tr>
<tr>
<td>65 mm</td>
<td>white</td>
<td>REF. 16965/0133</td>
</tr>
</tbody>
</table>

Goblet hexagonal for 36 of the 0.5 ml or 80 of the 0.25 ml straws (without illustration)

- white  REF. 16970/0036
- green  REF. 16970/0136

### 0.25 ml and 0.5 ml semen straws
In many different colors.

### Macrotubes
Volume: 2.5 ml, length: 140 mm  REF. 13441/0133
Volume: 4 ml, length: 240 mm  REF. 13441/0240
Volume: 5 ml, length: 280 mm  REF. 13441/0280

Sealing balls for macrotubes: Metal or glass, in many different colors available.

**Straws can also be delivered preprinted. Please ask for the Minitube printing service!**
FREEZING OF STALLION SEMEN

Cryogenic containers for storage

MVE storage container ET20, 6 canisters, 279 x 41.9 mm, capacity: 20.5 l liquid nitrogen, 1758 0.5 ml semen straws; normal working-duration: 111 days; neck opening: 55 mm, total height: 652 mm, weight (full): 28.3 kg

REF. : 16503/2056

MVE storage container ET35, 6 canisters, 279 x 37 mm, capacity: 36 l liquid nitrogen, approx. 1464 0.5 ml semen straws; normal working-duration: 182 days; neck opening: 55 mm, total height: 657 mm, weight (full): 44.0 kg

REF. : 16503/3606

MVE storage container ET40-10, 10 canisters, 279 x 70 mm, capacity: 37.8 l liquid nitrogen, approx. 10000 0.5 ml semen straws; normal working-duration: 59 days; neck opening: 127 mm, total height: 668 mm, weight (full): 47.4 kg

REF. : 16502/3710

One-Way-Shipper 3.0

Single use shipper; ensures a safe shipment of temperature-sensitive semen doses. IATA conform.

Static holding time: 4 days
Capacity: 200 x 0.25/100 x 0.5 ml straws, 3 liter
Weight: 4.5 kg

REF. : 16502/0003

Vapor shipper

SC 4/2, 1 canister, 278 x 67 mm, capacity: 3.6 l liquid nitrogen, approx. 880 x 0.5 ml semen straws or 90 macrotubes, static holding time: 14 days, neck opening: 70 mm, total height: 468 mm, weight (full): 8.1 kg, IATA conform

REF. : 16504/2001

SC 4/3, 1 canister, 278 x 46 mm, capacity: 4.3 l liquid nitrogen, approx. 420 x 0.5 ml semen straws or 30 macrotubes, static holding time: 21 days, neck opening: 51 mm, total height: 492 mm, weight (full): 9.3 kg, IATA conform

REF. : 16504/3001

Protecting shipping container for Vapor Shipper, made of plastic, IATA conform

REF. : 16504/3010

www.minitube.de
**Embryo flushing catheters for mares**

Made of silicone, CH 28, length approx. 90 cm, autoclavable, 100 ml balloon, sterilised  
REF. : 19009/0027

Made of silicone, CH 32, length approx. 90 cm, autoclavable, 100 ml balloon, sterilised  
REF. : 19009/0032

Made of silicone, CH 36, length approx. 90 cm, autoclavable, 100 ml balloon, sterilised  
REF. : 19009/0036

**Flushing tubing**

Disposable Y-junction tubing with clamps, to be used in combination with any catheter and inline filter, sterilised (gamma irradiated), 1/bag, tubing made of very smooth and flexible material, end for filter connection without extra adapter

High flow Y-junction tubing (1)  
REF. : 19009/0040

Standard Y-junction tubing:  
Luer end (2)  
REF. : 19011/0100  
Foley end (3)  
REF. : 19011/0200

Luer adapter for CH 28-38 catheters and for foley catheters  
REF. : 19009/1238

**EmSafe filter**

**Your benefits**

- All-in-one filter and search dish
- Angled filter mesh, assuring smooth flow-through
- 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
- Air vent of the lid secured by filter
- Integrated search dish facilitates evaluation of the embryo in the EmSafe
- Cup holds a minimum of 60 ml of fluid level
- Transparent cup allows to find bigger embryos without microscope
- Excess fluid is controlled and removed through outlet tubing with attached thumb clamp

EmSafe filter for embryo recovery with integrated petri dish with grid, mesh size 65 µ, sterilised  
REF. : 19010/6000
EQUINE EMBRYO TRANSFER

Media for flushing and holding

EquiFlush
Ready for use, contains buffers, BSA or PVA and antibiotic.

With BSA, 2 liters
REF.: 19982/6202

With PVA, 2 liters
REF.: 19982/6212

EquiHold
Applicable for:
- holding embryos at room temperature in ambient conditions
- transporting embryos
- washing and rinsing embryos
- loading embryos for transfer to recipient animal

Contains buffers, glucose, pyruvate, BSA, amino acids, growth factors and antibiotic.

3 x 5 ml vials
REF.: 19982/6250

Vitrification

Equine VIT-Kit
Vitrification is a proven method for cryopreservation of Equine embryos. The VIT-Kit for equine embryos contains everything needed for vitrification of three equine embryos: Equilibration Medium (3 x VS1, 3 x VS2, 3 x VS3), 3 x Diluent, 1 x Syringe 1 ml, 3 x Pipette tip, 4 x 5-well dish, 10 x 0.25 ml sterile straws, 10 x 0.5 ml sterile straws, 3 x IDSticks, 1 x 10 mm goblet cane, 3 x 10 mm goblets

REF.: 19982/6251

Handling of embryos

Micropipettor, for handling of embryos. Easy and precise pipetting by handling wheel, for all sizes of capillary tubes up to 1 ml

Type A
REF.: 19022/0000

Type B
REF.: 19022/0002

Glass capillary tube, 250/package

10 μl
REF.: 19022/0010

20 μl
REF.: 19022/0020

50 μl
REF.: 19022/0050

Steripette, for embryo handling, 55 mm length, sterilised, 50/package
REF.: 19025/0050

Disposable syringe 1 ml, luer end, sterilised
REF.: 19025/0000

Embryo culture dish, with lid, sterilised, 5 wells, rounded well edges, shallow wells for easy handling, 4/bag (not shown)
REF.: 19021/0001
Stereo microscope

Magnification 10x to 70x, eye-pieces 10x, LED light source, light-/dark-field mirror, transmitted light illumination

REF. : 12014/0000

Accessories

Heating stage for stereo microscope, 180 x 180 mm

REF. : 12055/0003

Control unit HT 50, for heating stage, adjustable temperature, digital display

REF. : 12055/0050

Embryo transfer with 0.5 ml straws

Sheath for equine embryo transfer, front end opening, individually packaged, 10/package, sterilised

REF. : 19290/1050

Sheath for equine embryo transfer, side openings, individually packaged, 10/package, sterilised

REF. : 19290/1060

Finger support and ring, for use with sheath for equine ET and AI stylet 17209/1065

REF. : 19290/1048

Equine embryo transfer pipette, metal tip with side opening, flexible, 1/package, disposable, sterilised, use with AI stylet 17209/1065

REF. : 19290/1065

Inner catheter for equine embryo transfer pipette, to flush embryo into the uterus with approx. 2 ml volume, no need to load it into a straw (not shown)

REF. : 19290/1066

Stainless steel ET instrument

Sterilisable transfer instrument for 0.5 ml straws, 1 side outlet, length 55 cm, screw-off tip

REF. : 19290/0000
EQUINE EMBRYO TRANSFER

Embryo transfer with 0.25 ml straws

Deep intrauterine ET/AI set
with finger support, stylet, fixation rings  
REF. : 17015/0100

Sheath for equine ET/AI, 0.25 ml straws, side opening, for usage with stylet 17015/0100, sterile, individually packaged, 10/bag  
REF. : 17015/0660

Embryo transfer > day 8

ET/AI Pipette, rounded ends, use with syringe, sterilised, 1/bag  
REF. : 19290/1101

Straws

0.5 ml straw, clear, gamma irradiated
with ID rod seal, 10/package  
REF. : 19043/00XX
without seal, 10/package  
REF. : 19043/1010
length 90 mm, 10/package  
REF. : 19044/9110

0.25 ml straw, clear, gamma irradiated
with ID rod seal in many bright colors, 10/package  
REF. : 19040/00XX
with sealing ball, 10/package  
REF. : 19041/0010
without seal, 10/package  
REF. : 19042/0010

Hygienic sheath

Disposable sheath to protect ET or AI pipette during uterine passage, length: 62.5 cm (70/roll)  
REF. : 17209/5070

You are interested in freezing of embryos, OPU, micro-manipulation and ICSI? Please ask our specialists!

www.minitube.de
Minitüb is an ISO 9001:2008 certified company.