

# Animal Reproduction Technology Equine





## MINITUBE INTERNATIONAL

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 Al 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**

CE0



#### We look forward to your orders and inquiries:

#### Minitube International AG, Germany

Phone: +49 8709 9229 0 E-mail: minitube@minitube.de

#### Minitube USA

Phone: 800.646.4882 E-mail: info@minitube.com

#### Minitub do Brasil

Phone: +55 51 3222 7876 E-mail: minitub@minitube.com.br

#### Minitub Ibérica

Phone: +34 977 845 397 E-mail: info@minitub-iberica.com

#### Minitube Australia

Phone: +61 3 5342 8688 E-mail: info@minitube.com.au

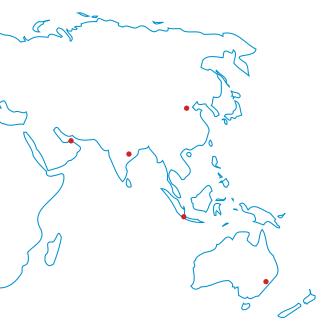
#### Minitub Chile

Phone: +56 (9)97452036 E-mail: minitub@minitubchile.cl

#### Mexitube Alemania

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

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#### Minitube India

+91 11 4309 0668 Phone: E-mail: info@minitube-india.com

#### Minitube China

Phone: +86 185 1545 5770 info@minitube.cn E-mail:

#### **Minitube Central Europe**

+421 377 877 915 Phone: mtce@minitube.sk E-mail:

#### Minitube Canada

800.500.7978 Phone: E-mail: info.canada@minitube.com

#### **Minitube Middle East**

+971 426 68871 Phone: info.middle.east@minitube.com E-mail:

#### Minitube Indonesia

Phone: +62 21 7591 75-96/94 info@minitube.co.id E-mail:



# Semen collection

## Hannover artificial vagina

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

REF.: 11220/0145

REF.: 5011222/0008

#### Accessories

(6) Leather handle for Hannover AV

(2) Inner liner for Hannover AV, rubber, with roll-up ends, sterilizable REF.: 11222/0002 long version, 100 cm **short version**, 70 cm REF.: 11222/0003 (3) Disposable inner liner, width approx. 21 cm, roll with approx. 200 m; "sensitive": smooth and resistant material REF.: 11222/0120 **(4) Warming bag** for collection glass, protects the semen from low temperature and UV radiation REF.: 11225/0026 (5) Rubber band for Hannover AV REF.: 11222/0001 Semen collection bottle 250 ml, glass REF.: 11245/0006



## **SEMEN COLLECTION**

## Missouri artificial vagina

**Equine artificial vagina Missouri**, double latex liner with valve and leather casing, adapter and collection bottle, length: approx. 50 cm

REF.: 11245/0000

**Disposable inner liner "AV-Liner",** for Missouri and Hannover AV, 25/package **REF.**: 11245/0450



## Colorado artificial vagina

**(1) Equine artificial vagina Colorado**, complete with 3 inner rubber liners (tubular, conical, straight), 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

<b>(2) Disposable inner liner</b> , plastic, width 31 cm, ro "sensitive": smooth and resistant material	Il with approx. 200 m; <b>REF.</b> : <b>11232/0030</b>
Disposable inner liner Colorado,	
( <b>3</b> ) 25/package	REF.: 11232/0110
(4) AV shaped, 25/package	REF.: 11232/0102
(5) Semen collection bottle Colorado, 200 ml, disposable, 100/package	REF.: 11231/0200
Coupling nut for 200 ml semen bottle,	
100/package	REF.: 11231/0301
(6) Semen filter Colorado, nylon,	
fits Colorado collection bottle, 25/package	REF.: 11231/0400

Warming bag	
(7) small, for 200 ml collection bottle	REF.: 11225/0026
(8) large, blue	REF.: 11231/0185
Rubber inner liner for Colorado AV,	
tapered end for connection to the bottle	
flared front end	REF.: 11231/0102
(9) straight form	REF.: 11231/0101
round form	REF.: 11231/0201
tubular, flared ends	REF.: 11231/0103

## **SEMEN COLLECTION**

#### **Accessories for semen collection**

<u>Vaseline</u>, 1000 g <u>REF. : 11905/0100</u>

Lubricating jelly Bengen,

1 l, water soluble **REF.** : 11906/1000

**(1) Semen filter**, nonwoven, 150 x 60 mm,

<u>100/package</u> **REF.** : **11245/3100** 

Semen filter pouch,

nonwoven, 10/package REF.: 11260/1000

(2) Thermometer for artificial vagina,

Bimetal, non-breakable, up to +100°C REF.: 11027/0000 up to +100°C, graduation 0.1°C, red filling REF.: 11027/0100

(3) Semen collection glove, extra sensitive, sperm safe, 100/box

Size M	REF.: 11128/0055
Size L	REF.: 11128/0060
Size XL	REF.: 11128/0065
Size XXL	REF. : 11128/0070



## **Sterivar**

Low pressure sterilizer, specially designed for artificial vaginas and accessories. Made of stainless steel, double wall with insulation. With pressure safety valve, timer, water drain and protection against overheating.

- Temperature range: up to +100°C
- Pressure: max. 0.02 bar
- Inside dimensions: 750 x 400 mm
- Power supply: 115 V/60 Hz or 230 V/50 Hz
- Power consumption: 3500 W

Sterivar 230 V	REF.: 11050/0015
Sterivar 115 V	REF. : 11050/0014
Roller base for Sterivar	REF : 11051/0000



## **SEMEN COLLECTION**

## **Hannover phantom for stallions**

**Hannover phantom,** 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

REF.: 11200/0000

**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.

REF.: 11200/1000

#### Accessories

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

REF.: 11200/2601

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

REF.: 11200/2501

Bite belt REF. : 11200/2100

Stretch foil for protection of phantom, 300 m REF.: 32000/0010



## **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, Al equipment and instruments

Tube with 100 ml, resealable	REF. : 11907/0100
3 I canister, without dispenser	REF. : 11907/3000
Dispenser for canister	REF. : 11907/3100







# Semen evaluation

#### **AndroVision®**

This highly precise 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, acrosome integrity, viability, mitochondrial activity and DNA integrity can be assessed fast and accurately with up to 1000 cells per field, making AndroVision® the perfect tool for the **objective** and complete semen evaluation.

Its features make AndroVision® the ideal choice for semen assessment in a research and production lab. AndroVision® is intuitive and easy to use: **only** 3 clicks from start to result.

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

AndroVision® high speed color camera REF.: 12500/4400

#### **Optional hardware configurations**

(1) AndroVision® CASA system

portable, with laptop and accessories REF.: 12500/0010

(2) AndroVision® CASA system

with touchscreen and barcode scanner REF.: 12500/0001





## ANDROVISION® - MORE THAN CASA

#### 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 Kruger). 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**

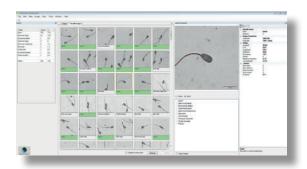
Automated count of percentage of sperm with active mitochondria, based on a double stain fluorescence assay.

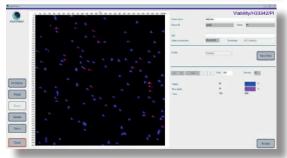
Module Mitochondrial Activity\* REF.: 12500/1700

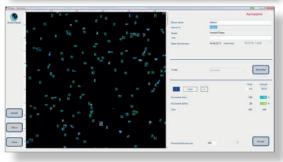
#### **DNA Integrity**

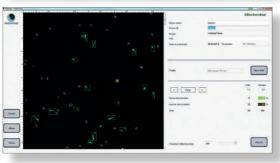
Automated reporting of the percentage of sperm with defective DNA based on the halo-technique combined with fluorescent staining.

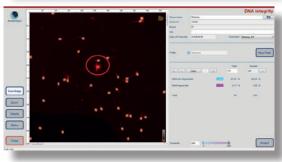
Module DNA Integrity\* REF. : 12500/1800











<sup>\*</sup> requires fluorescence microscope

## MICROSCOPY, VOLUME MEASUREMENT AND PHOTOMETRY

## Phase contrast microscope CX 43

- Phase achromat optics with universal condenser
- Heated microscope stage with temperature control unit HT 200 with additional warming plate and two digital temperature displays (temperature adjustable)
- Ergonomic design
- 6 V/30 W halogen light

#### Phase contrast microscope CX 43

with phototube (trinocular), objectives 20x, 40x REF. : 12005/0041



## Phase contrast microscope MBL

Functional microscope for semen analysis with heating system and temperature control unit for individual temperature adjustment.

Binocular, objectives 10x, 40x, 100x, temperature control unit HT 50

 with ocular color camera (1) and 11.6" monitor (2)
 REF. : 12010/2000

 REF. : 12010/2100
 11.6" monitor (2)

**Trinocular**, objective 20x

with temperature control unit HT 50

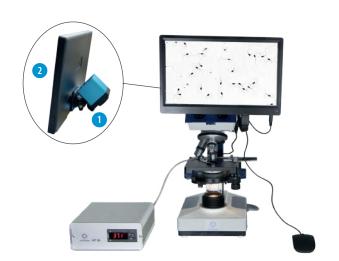
with temperature control unit HT 200, additional warming plate,
ocular color camera and 24" monitor

(1) Digital color camera for microscopes

REF.: 12110/1600

(2) Monitor 11.6" with HDMI input

REF.: 12110/1610



## Semen dyes

**Spermac** semen dye for morphological evaluation,

4 x 50 ml

Farelly stain for morphological evaluation,
3 x 250 ml

REF.: 15405/0026

Eosin G, 2% solution for supravital staining,
50 ml

REF.: 15405/0025

Nigrosin, 4% solution for supravital staining,
50 ml

REF.: 15405/0029



**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



## MICROSCOPY, VOLUME MEASUREMENT AND PHOTOMETRY

## **Microscopy supplies**

Microscope slide, 76 x 26 mm, 50/box	REF.: 15400/2400
<b>Cover glass,</b> 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**

Adjustable single channel pipette,

yellow, autoclavable, 10 - 100 μl	REF.: 12425/4810
<b>Pipette tip</b> , 10 – 100 μl, yellow, 1000/bag	REF. : 12425/9409



#### **Photometer SDM 1**

The SDM 1 is a **compact, highly accurate photometer** developed for measuring sperm cell concentrations. It can be calibrated for equine, bovine, canine, porcine and small ruminants. Cleaning is simple, maintenance is minimal.

- 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
- The semen concentration is displayed in million sperm/ml
- Power supply: with included mains adapter 100 240 V or batteries

Photometer SDM 1, calibrated for equine semen REF.: 12300/0101

Accessories	
Microcuvette for SDM 1, 100/box	REF. : 12300/1111
Multispecies software	
for reprogramming to other species	REF. : 12300/0130







# Semen extenders

## **EquiPlus**

Balanced medium with dry milk for preservation of sperm activity up to 72 hours. Designed for  $5^{\circ}\text{C}$  storage and transport.

#### With antibiotics:

#### Powder

for 1 l, with Lincomycin and SpectinomycinREF.: 13570/0202for 100 ml, with Lincomycin and SpectinomycinREF.: 13570/0210

#### Combi

Combines extender powder (included in the lid of the bottle) and sterile pure water (in the bottle itself), for handy preparation.

100 ml, with Lincomycin and Spectinomycin REF. : 13570/0220

#### Liquid

200 ml, with Lincomycin and SpectinomycinREF.: 13570/0250200 ml, with TicarcillinREF.: 13570/0260200 ml, with Amikacin and PenicillinREF.: 13570/0261100 ml, with GentamicinREF.: 13570/0301

#### Without antibiotics:

Powder, for 1 I, without antibioticsREF.: 13570/0201Powder, for 100 ml, without antibioticsREF.: 13570/0240







## CHILLED SEMEN PROCESSING

#### Gent

For fresh semen, with egg yolk and antibiotic, ready to use.

REF.: 13571/0045 100 ml REF.: 13571/0100

# Gent Ex

## **EquiPlus Reinforcer**

Designed to improve sperm transport in the uterus and to optimize survival of viable spermatozoa in the mare's reproductive tract. Semen is recovered post-breeding, then evaluated and extended before it is placed back into the mare during reinforcement breeding. Ready-to-use, requires no dose calculations.

15 ml REF.: 13570/0600



#### CushionFluid

For gentle centrifugation of stallion spermatozoa. Assures a higher yield of sperm cells as compared to standard centrifugation.

100 ml REF.: 13580/0001

REF.: 13565/0001





## Water for semen extenders

Powder for 1 I transparent EDTA - Glucose solution

**Centrifugation medium** 

Bidistilled, sterilized, pyrogen-free

REF.: 13570/1000 100 ml REF.: 13570/1100





#### Minitube extenders are produced according to highest GMP-certified 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.



## CRYOPRESERVATION OF SEMEN

## **Spectrum - The SBS CryoSystem**

The SBS CryoSystem consists of a range of Spectrum freezing extenders, which feature different cryoprotectants and specific different egg yolk or milk content. The Spectrum concept allows to identify the best freezing extender for each individual stallion.

All Spectrum extenders are presented as ready to use solutions. There is no need to source individual components or to add antibiotics.

With Spectrum extenders and the SBS CryoSystem it is possible to achieve pregnancy rates with frozen-thawed semen which are comparable to cooled semen.

Spectrum extenders are presented in convenient package sizes. Transport and storage at  $-20^{\circ}$ C.

#### **Spectrum Red**

- High egg yolk content
- No milk
- · Best combined with rapid cooling and freezing

30 ml REF.: 13572/0030

#### Spectrum Blue

- Complex formula
- Low in milk and egg yolk
- Best combined with slow cooling and freezing
- The cryoprotectant is highly membrane permeable

30 ml REF.: 13572/0050

#### Spectrum Green

- Milk-based
- Low in egg yolk
- Best combined with rapid cooling and freezing
- Beneficial for certain stallions only

30 ml REF.: 13572/0040

#### **Spectrum Orange**

- · Complex formula
- Low in milk and egg yolk
- Best combined with slow cooling and freezing

30 ml REF. : 13572/0020

#### **Spectrum Violet**

- · Complex formula
- Low in milk, contains egg yolk
- Best combined with slow cooling and freezing
- Contains a balanced combination of cryoprotectants

30 ml REF.: 13572/0060

Spectrum extenders are not available in Australia.



#### **Test Freeze Kit**

Minitube offers a Test Freeze Kit, containing the main Spectrum extenders in smaller quantities, plus centrifugation medium and CushionFluid for centrifugation. With the help of this Test Kit, it is possible to find the best Spectrum extender for each stallion.

- 2 x Spectrum Orange (15 ml), 2 x Spectrum Red (15 ml)
- 1 x Spectrum Blue (15 ml), 1 x Spectrum Violet (15 ml), 1 x Spectrum Green (15 ml)
- 2 x CushionFluid, 30 ml
- 2 x SBS Centrifugation Medium, 120 ml

Test Freeze Kit REF.: 13572/0000





# Lab equipment and supplies

## **Universal cabinet**

**For warming and sterilization.** Temperature range: +30°C to +220°C.

Various sizes available (dimensions inside, W x H x D)

<b>32 I</b> , 400 x 320 x 250 mm, 44 kg, 230 V	REF. : 14127/0032
<b>32 I</b> , 400 x 320 x 250 mm, 44 kg, 115 V	REF.: 14127/0033
<b>53 I</b> , 400 x 400 x 330 mm, 55 kg, 230 V	REF.: 14127/0053
<b>53 I</b> , 400 x 400 x 330 mm, 55 kg, 115 V	REF.: 14127/0054
<b>108 I</b> , 560 x 480 x 250 mm, 72 kg, 230 V	REF.: 14127/0108
<b>108 I</b> , 560 x 480 x 250 mm, 72 kg, 115 V	REF.: 14127/0109
<b>256 l</b> , 640 x 800 x 500 mm, 96 kg, 230 V	REF.: 14127/0256
<b>256 I</b> , 640 x 800 x 500 mm, 96 kg, 115 V	REF.: 14127/0257

## **Water bath**

Electronic temperature control, stainless steel, with grid and lid.

**7 I** , inner dimensions: 277 x 150 x 217 mm (W x H x D)

230 V	REF.: 14078/0001
115 V	REF. : 14078/0002

**10 I**, inner dimensions: 267 x 200 x 207 mm (W x H x D)

230 V	REF.: 14079/0001
115 V	REF.: 14079/0002





## LAB EQUIPMENT AND SUPPLIES

## **Centrifuge Minitube**

- · With swing out rotor
- Complete with buckets for vials: 4 x 100 ml/4 x 50 ml/8 x 15 ml
- Speed in g (RCF) and rpm: max. speed 4000 rpm/2200 x g
- Memory: 99 programs

230 V REF.: 14601/0000 110 V REF.: 14601/0001

## **Laboratory centrifuge**

- With quadruple swing out rotor
- Beaker for 100 ml vials
- Max. RCF: 2540 xg (stepwise adjustment of 10 xg)
- Last run memory

100 - 240V / 50-60Hz REF. : 14602/0580

## **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)

230 V REF.: 14340/0348 115 V REF.: 14340/0349

#### **Shaker**

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

230 V REF.: 14703/0304 115 V REF.: 14703/0305

## Laboratory heating plate

For keeping raw ejaculates warm until analysis is completed. Preset temperature:  $37^{\circ}$ C. Integrated control unit, external power supply. Heated area:  $470 \times 260$  mm. Suitable for 115 V und 230 V.

Laboratory heating plate REF.: 12055/0010

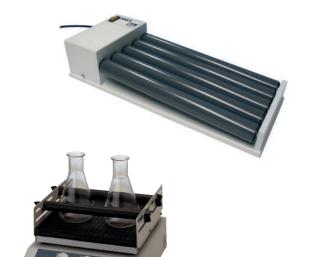
#### Infrared thermometer

For temperature measurement without contact. With laser for marking the measuring point. Measurement range: -50 to +200°C /+200 to +800°C. Display in °C or °F selectable. With case and battery.

Infrared thermometer REF.: 15120/7000











## LAB EQUIPMENT AND SUPPLIES

#### **Glass ware**

We offer a variety of measuring pipettes, graduated cylinders, beakers, dispensers, test tubes, Erlenmeyer flasks etc.

Please contact us for further information.

## **Plastic vials**

#### Plastic vial with graduation

REF.: 17231/0030
REF.: 17220/0017
REF.: 17230/6001
REF.: 17230/6000

#### **Screw cap** for 13 ml plastic vial, 1000/package

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
for 20 plastic vials 30 ml, acrylic glass	REF.: 17231/9384
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, sterilized, in sizes from 1 ml to 50 ml

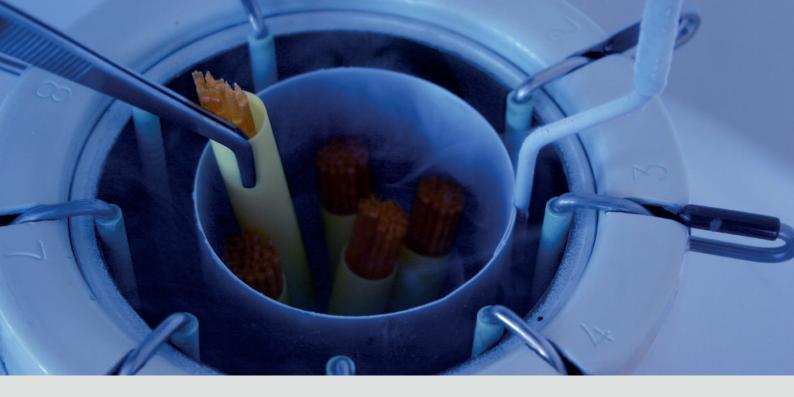
<b>1 ml</b> , 100/package	REF.: 19801/0001
<b>2 ml</b> , 100/package	REF. : 19801/0002
<b>5 ml</b> , 100/package	REF. : 19801/0005
<b>10 ml</b> , 100/package	REF.: 19801/0010
<b>20 ml</b> , 100/package	REF.: 19801/0020
<b>30 ml</b> , 500/package	REF.: 19801/0063
<b>50 ml</b> , 300/package	REF.: 19801/0060











# Straw processing and freezing

## **Semen straws**

MediumStraw, 0.5 ml, clear, 2500/bag	REF.: 13408/0010
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 colors, and pre-printed upon request.



## **Macrotubes**

<b>2.5 ml</b> , length: 140 mm	REF.: 13441/0133
<b>4 ml</b> , length: 240 mm	REF. : 13441/0240
<b>5 ml</b> , length: 280 mm	REF. : 13441/0280

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



## PRINTING OF SEMEN STRAWS

## **EasyCoder**

#### Clean and odorless printing of straws without ink and solvents.

- Thermal transfer printer with automatic straw supply (output: 3600 straws per hour) for immediately non-abrasive print
- Unparalleled neat and clear printing on 0.5 and 0.25 ml straws; easy and guick conversion between different straw sizes
- Prints up to 3 lines per straw, including barcodes, logos and specific characters
- Control via PC by a clear and user-friendly Minitube software
- Easy handling, little maintenance required
- Dimensions (L x W x H): 660 x 370 x 310 mm (PC not included)
- Power supply: 110 V/50-60 Hz or 230 V/50-60 Hz

EasyCoder printerREF. : 13038/0000Thermal transfer ribbon, blackREF. : 13038/0010



#### MultiCoder

Professionalize your lab process with quick and easy machine readable labeling of samples.

#### **Your benefits**

- Very versatile: print system can label most kinds of materials such as plastics, glass or aluminum
- Manually moveable slide and a unique, easy-to-use carrier system allow for a speedy work process
- Easily writeable information on the smallest amount of space, including text, barcode, QR-Code and logo

#### **Product features**

- High resolution inkjet printing
- Print head protection system (avoids drying-out of ink)
- Sensor based technique for print activation allows perfect manual workflow.
- LED signalling of printer status
- No tools needed for change of product carriers
- Pre-designed print layouts
- Upload of MS Excel based data formats possible
- Automatic creation of content for ready-to-print designs via database

MultiCoder printer REF.: 13145/0000

More information needed? Please ask for the MultiCoder leaflet!



#### **UNIQUE, FLEXIBLE & VERSATILE**

**Quick and easy print on a whole range of items:** semen straws, goblets, cassettes, culture dishes, macrotubes, syringes, cryovials and many more

## FILLING AND SEALING OF STRAWS

#### **MPP Uno**

Automatic filling and sealing machine for 0.25 and 0.5 ml straws.

#### **Product features**

- Seals and fills 1 straw per cycle (ideal for handling small volumes)
- Sealing performed by ultrasound
- Conversion between 0.25 ml straws and 0.5 ml straws without exchanging any parts and within only a few minutes
- Very compact device which takes up little space
- Vacuum pump and pressure controller integrated into the device
- Ultrasonic generator in an external casing that can be installed at a distance of up to 2.5 m (ON/OFF switch directly on the machine)
- Completely closed filling and sealing area: best hygienic and safety conditions fully guaranteed

#### **Technical features**

- Capacity: approx. 4000 straws/hour
- Hopper capacity: 2200 straws of 0.25 ml or 1300 straws of 0.5 ml
- Machine dimensions: 460 x 350 x 410 mm (W x H x D) plus ultrasound generator
- Power supply: 110 V/60 Hz or 230 V/50 Hz

MPP Uno, complete REF.: 13017/0000



#### **Accessories**

<b>Straw hopper</b> , for 0.25 and 0.5 ml straws	REF. : 13018/0006
Filling nozzle 0.5 ml	REF.: 13017/0017
Suction nozzle 0.5 ml	REF.: 13017/0027
<b>Fixing unit</b> for filling and suction blocks, stackable, stainless steel	REF. : 13017/0050
Washer for 0.25 ml and 0.5 ml nozzles, 5000/bag	REF.: 13021/3001
<b>Filling and suction tubing</b> , 380 mm, sperm friendly bevelled edge, 100/aluminum foil bag	y material (silicone), REF. : 13021/3800

## **Semiautomatic system SFS 133**

#### **Product features**

- Straws are filled and sealed 6 by 6
- Sealing is done securely and hygienically with metal or glass sealing balls (available in different colors)
- An air bubble of 1 cm is automatically produced in each straw
- Capacity: approx. 2000 straws/hour

#### Semiautomatic system SFS 133, with vacuum bottle,

filling and suction head for 0.5 ml straws	REF. : 13133/0133
Low density vacuum pump, 30-60 Hg, v	vith manometer and valve
230 V/50 Hz	REF.: 13133/0267
115 V/50 Hz	REF. : 13133/0268
Cartridge loading device,	

with loading block and 10 cartridges for 36 straws 0.5 ml REF.: 13133/0005



#### **Accessories**

Washer for all filling and suction nozzles, 5000/bag	REF.: 13021/3001	
Silicone tubing for SFS		
transparent, 3 x 1 mm, length 10 m	REF.: 13133/3550	
Filling head with 6 nozzles	REF.: 13133/1000	
Suction head with 6 nozzles	REF.: 13133/2000	
Metal sealing ball for 0.5 ml straws	REF. : 13400/9900	

## FREEZING OF STALLION SEMEN

#### Automatic freezer IceCube

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

#### **Product 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 freeze programming and control. Unlimited storage of programs and processed files, color graphic display of all temperature curves, wide possibility of parameter settings.

Dimensions: 540 x 420 x 520 mm (L x W x H), weight: 29 kg

**IceCube 14S** with connector kit for LN2 pressure container

(1) with 10" tablet	REF.: 16821/3000	
with 12" touch screen monitor,		
to connect to own PC or laptop	REF. : 16821/2000	
without screen, to connect to own PC or laptop	REF. : 16821/1000	

## Accessories

(2) Rack for IceCube 14S, for 36 straws	REF.: 16821/5036
<b>Loading device</b> for straw rack	REF.: 16821/5037
(3) Handling rack for IceCube 14S	REF.: 16821/5030
(4) Spacer for IceCube 14S	REF.: 16821/5018
Liquid Nitrogen pressure container, 60	REF. : 16820/1900
Roller base for LN2 pressure container	REF. : 16501/0204
(5) Pliers for racks	REF. : 16821/5031

#### (6) Embryo freezing with the IceCube

<b>Autoseeding Preparation</b> for freezing embryos	REF.: 16821/5019
<b>Autoseeding Rack*,</b> capacity: 35 x 0.5 ml straws	REF. : 16821/5020
<b>Autoseeding Rack*</b> , capacity: 43 x 0.25 ml straws	REF. : 16821/5021

<sup>\*</sup>Spacer included



#### Larger alternative:

**IceCube 14M** - capacity: approx. 2300 x 0.5 ml straws

with 12" touch screen monitor	REF.: 16820/7000
without screen	REF. : 16820/6000



## 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 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.

- Distance between straws and liquid nitrogen level can be adjusted
- Fits 0.5 ml and 0.25 ml straws
- Low nitrogen consumption
- High quality styrofoam chest and stainless steel inner box
- Easy transport

(1) for 20 straws

(2) for 90 straws	REF.: 15043/0736
Accessories	
Loading block for 90 straws floating rack	REF. : 15043/0738
Additional rack (3) for freezing unit for 20 straws	RFE: 5015043/0600

REF.: 15043/0636

REF.: 5015043/0900

REF.: 16965/6013

REF.: 16967/0065



## **Storage systems for straws**

Short a	nd Iona	triangulai	cassettes

for 2 x 13 mm goblets

**Divider** for goblets, 100/bag, 12 cm

(4) for freezing unit for 90 straws

for 10/20 straws 0.5 ml or 28/56 straws 0.25 ml REF.: 16981/xxxx Short and long flat cassettes for 3/6 straws 0.5 ml or 6/12 straws 0.25 ml REF.: 16980/XXXX Available in multiple colors. **Goblet**, diameter 65 mm, white, 25/bag REF.: 16965/0133 **Goblet**, diameter 35 mm, white, 25/bag REF.: 16935/0135 Goblet, diameter 13 mm, white, 300/bag REF.: 16913/0133 Goblet, diameter 10 mm, white, 300/bag REF.: 16910/0010 Goblet, diameter 7.1 mm, white, 500/bag REF.: 16907/0071 Goblet canes. for 2 x 10 mm goblets REF.: 16965/6000

**Identification rod**, 140 mm length for 0.25 ml straw REF.: 16903/0210 for 0.5 ml straw REF.: 16903/1210





# Semen storage and transport

## **Neopor transport box**

Minitube transport box, made of highly insulating Neopor, complete with two ice-packs, two syringes (20 ml) and outer shipping carton, holding optimal temperature for approx. 45 hours.

Neopor transport box REF. : 17229/0002

## **Equitainer**

World-wide proven system for cooling, storage and transport of fresh semen.

**(1) Equitainer**, comes with 1 tube-style isothermalizer, 2 freezer cans, and 6 tubes (50 ml)

 REF.: 17220/0015

 (2) Freezer can
 REF.: 17221/0120

 (3) Isothermalizer for two 50 ml tubes
 REF.: 17220/0016

 (4) 50 ml tube
 REF.: 17220/0017





## SEMEN STORAGE AND TRANSPORT

## **Cryo container (MVE storage container)**

**ET 20** with 6 canisters 279 x 73 mm; capacity: 3732 x 0.5 ml semen straws; normal working duration: 107 days; neck opening: 55 mm; total height: 627 mm; weight (full): 26 kg

REF.: 16503/2056

**ET 35** with 6 canisters 279 x 108 mm; capacity: 3732 x 0.5 ml semen straws; normal working duration: 175 days; neck opening: 55 mm; total height: 679 mm; weight (full): 42 kg

REF.: 16503/3606

**ET 40-10** with 10 canisters 279 x 73 mm, capacity: 16400 x 0.5 ml semen straws; normal working duration: 59 days; neck opening: 127 mm; total height: 670 mm; weight (full): 45 kg



#### Other capacity/size on request.



# **Vapor shipper**

ET-40

**SC 4/2** with 1 canister 278 x 67 mm; capacity: 3.6 I liquid nitrogen, approx. 880 x 0.5 ml semen straws or 90 macrotubes; static holding time: 13 days; neck opening: 70 mm; total height: 468 mm; weight (full): 9.1 kg; IATA-compliant

ET - 20

REF.: 16504/2001

ET-35

**SC 4/3** with 1 canister 278 x 46 mm; capacity: 4.3 I 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): 9.5 kg; IATA-compliant

REF.: 16504/3001

**Protective shipping container** for Vapor Shipper, made of plastic, IATAcompliant

REF.: 16504/3010

## **CryoCube™ Dry Shipper**

Cryogenic shipping option for biological samples at -150°C in any orientation without sacrificing temperature.

Static holding time: 5 days; LN2 capacity: 2 l; 1 canister 127 x 35 mm; capacity: 182 x 0,25/88 x 0.5 ml straws; neck opening: 35 mm; overall dimensions: 305 x 305 x 305 mm (D x H x W)

REF.: 16505/0100





# **Insemination and diagnostics**

## **Universal pipettes**

- 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 Al 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
 REF.: 17209/0005

 1/package, sterilized
 REF.: 17209/0001

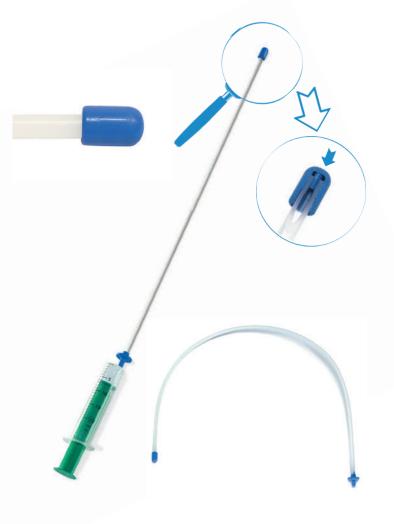
**Long pipette** with very flexible shaft for deep intrauterine insemination

#### Length: 65 cm

5/package	REF.: 17209/1165
1/package, sterilized	REF. : 17209/1265
Length: 75 cm	

 5/package
 REF.: 17209/1175

 1/package, sterilized
 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 equipped with an inner catheter to reduce the volume of the channel where the semen has to pass through.

#### Length: 65 cm

5/package	REF. : 17207/1165
1/package, sterilized	REF. : 17207/1265
Length: 75 cm	
5/package	REF.: 17207/1175
1/package, sterilized	REF.: 17207/1275



Includes deep intrauterine universal pipette with inner catheter, 5 ml syringe, supersensitive glove

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



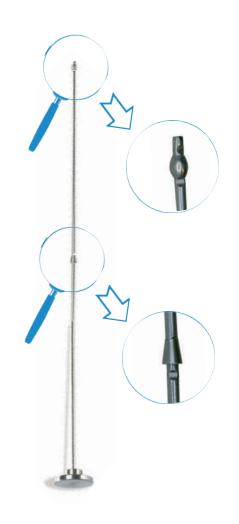
## Stylet for insemination of frozen semen

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 OF MARES**

## Insemination pipettes for liquid semen

(1) Length: 60 cm, rounded tip,

25/bag, fits luer syringe

(2) With tubing, 1/bag, sterilized

REF.: 17209/2210

(3) Length: 65 cm, larger diameter, 25/bag, fits luer syringe

REF.: 19290/1105

(4) Semen transfer adapter for syringe, length 13 cm, 10/bag

REF.: 17229/0020

## **Hygienic sheath**

To protect ET or Al pipette during uterine passage, length: 62.5 cm (70/roll)

Disposable sheath REF.: 17209/5070

#### **MiniCutter**

- Precise cut of 0.25 and 0.5 ml straws
- Facilitates straight cut at exactly the right length, which helps to avoid semen loss
- Ergonomic shape, easy to keep clean

MiniCutter for straws REF.: 17062/0010

## Thawing unit MT 30/54

- Electronic temperature control
- · Central, built-in thawing chamber with lift
- Accuracy: 0.2°C
- Power supply: 12 V DC (car battery)

35°C	REF.: 17044/0035
37°C	REF.: 17044/0037
38°C	REF.: 17044/0038
50°C	REF. : 17044/0050
<b>Transformer</b> for thawing unit 12 V / 220 V	REF. : 17165/1395
Thermometer for thawing unit	REF. : 17049/0000

## **Insemination gloves**

(1) Sensitive, green, 5 finger, shoulder length, 100/box REF.: 17080/0015
(2) Super-sensitive, transparent, 100/box REF.: 17080/0050
Single packed, sterilized, 50/package REF.: 17080/0250



#### **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 sterilized.

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



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

REF.: 17214/2960



**(1) Disposable speculum** 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

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

REF.: 17210/0010

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

REF.: 17215/0149

(4) Polansky speculum REF.: 17210/4200

**(5) Cervical forceps** according to Götze

 with lamp, 54 cm
 REF.: 17212/0055

 without lamp
 REF.: 17212/0054

**Biopsy forceps**, total length 74 cm **REF.**: 17214/5066

#### **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. Case included.

REF. : 24400/0150

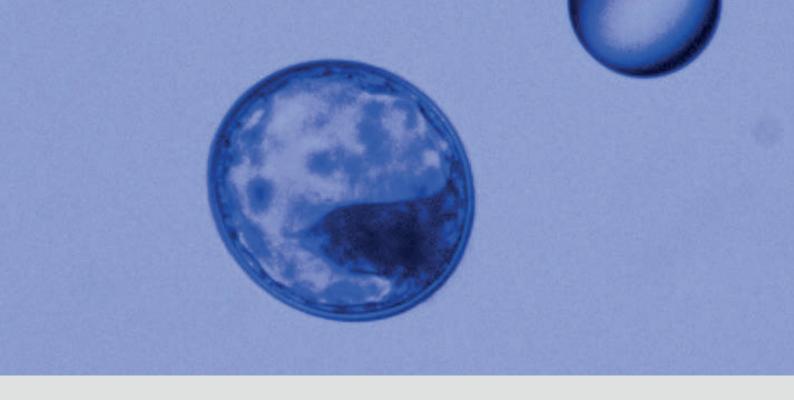












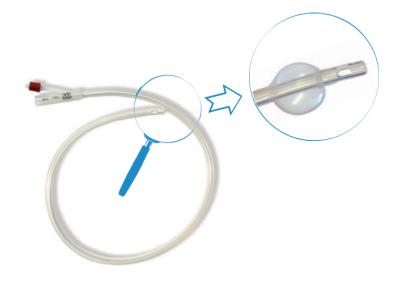
# **Embryo transfer and OPU**

## **Embryo flushing catheters for mares**

Made of silicone, sterilizable, length approx. 90 cm, Foley end, 2 large front ports, open ended, 100 ml balloon, sterilized.

The balloon, when inflated, facilitates tight closure of the cervix. All sizes allow high flow of flushing media in combination with high-flow Y-junction.

CH 28	REF. : 19009/0027
CH 32	REF.: 19009/0032
CH 36	REF. : 19009/0036



## **EMBRYO TRANSFER**

## **Flushing tubing**

Disposable Y-junction tubing with clamps, to be used in combination with any catheter. Tubing made of very smooth, flexible material. End for filter connection requires no extra adapter. Sterilized, 1/bag.

High flow Y-junction tubing, spike port REF.: 19982/0202

## Filters for embryo collection

- All-in-one dual purpose filters and search dishes: embryos are recovered directly from the filter dish
- Secure fixation of the lid during collection and easy to open after collection (no screw cap)
- Integrated search dish engraved with a grid makes it easy to search and find embryos (mesh size is ideal for all bovine and equine embryo sizes)
- Filter mesh cannot get dry as it remains in contact with fluid
- Excess fluid is controlled and removed through outlet tubing with attached thumb clamp (entry hole ist big enough to ensure the necessary flow speed of the flushing medium)
- Connection to all types of Y-tubing (bovine and equine) is possible
- Absolute tightness
- Sterilized

#### **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.

(1) EmSafe filter REF. : 19010/6000

#### MiniFlush®

Vertical all-in-one embryo recovery system with a large filter surface area. The vertical design provides higher flow rates and reduces plugging of the embryo filter. Due to its shallow design, the filter 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.

With the MiniFlush®, the entire flushing procedure can be completed without the need to monitor fluid levels as the filter automatically maintains a constant 20 ml volume.

(2) MiniFlush® filter REF.: 19222/2000







## **EMBRYO TRANSFER**

## Media for flushing and holding

#### EquiFlush

Ready for use, contains buffers, BSA or PVA and antibiotics

 With BSA, 2 |
 REF.: 19982/6202

 With PVA, 2 |
 REF.: 19982/6212

#### **EquiHold** - Applicable for

- holding embryos at 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, 1 x pipette tip, 4 x 5-well dish,  $10 \times 0.25$  ml sterilized straws,  $10 \times 0.5$  ml sterilized straws,  $3 \times 10$ -sticks,  $1 \times 10$  mm goblet cane,  $3 \times 10$  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

Model A REF.: 19022/0000
Model B REF.: 19022/0002

Glass capillary tube, 250/package

 20 μl
 REF. : 19022/0020

 50 μl
 REF. : 19022/0050

**(1) Steripette** for embryo handling, 55 mm, individually packed, sterilized, 50/package, for use with 1 ml insulin syringe

REF.: 19025/0050

(2) Disposable syringe, 1 ml, Luer end, sterilized REF.: 19025/0000

**(3) Embryo culture dish** with lid, sterilized, 5 wells, rounded well edges, mouse embryo batch tested, 4/bag **REF.**: 19021/0005



## **EMBRYO TRANSFER**

## **Stereo microscope**

**Stereo zoom microscope**, mirror for improved visualization of zona pellucida, total magnification from 10x to 70x, eye-pieces 10x, 110 V/60 Hz or 230 V/50 Hz

Stereo microscope, binocularREF. : 12014/0000Stereo microscope, trinocularREF. : 12014/1000

#### **Accessories**

**Heated stage**, 180 x 180 x 10 mm **REF.** : **12055/0003** 

Control unit HT 50.

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, sterilized

REF.: 19290/1050

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

REF.: 19290/1060

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

REF.: 19290/1048

**Equine embryo transfer pipette**, metal tip with side opening, flexible, 1/package, disposable, sterilized, use with Al 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

REF.: 19290/1066

# Stainless steel ET instrument

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

REF.: 19290/0000



## **EMBRYO TRANSFER AND OPU**

## Embryo transfer with 0.25 ml straws

**Deep intrauterine ET/Al set**, with finger support, stylet, fixation rings

REF.: 17015/0100

**Sheath for equine ET/AI**, with 0.25 ml straws, side opening, for usage with stylet 17015/0100, sterilized, individually packaged, 10/bag

REF.: 17015/0660



## **Embryo transfer** > day 8

ET/Al Pipette, rounded ends, fits luer syringe, sterilized, 1/bag, length 65 cm

REF.: 19290/1101



#### **Straws**

**0.5 ml straw**, transparent, sterilized

with sealing ball, 1/package	REF.: 19043/0001
with sealing ball, 10/package	REF.: 19043/0010
without sealing ball, 1/package	REF.: 19043/1011
without sealing ball, 10/package	REF.: 19043/1010
length 90 mm, without wick, 10/package	REF.: 19044/9110

**0.25 ml straw**, transparent, sterilized, 10/package

with ID rod seal in many bright colors	REF.: 19040/00xx
with glass sealing ball	REF.: 19041/0010
without seal	REF.: 19042/0010



#### Minitube OPU Media

**EquiPlus OPU Recovery Medium**, 500 ml of ready-to-use medium, contains BSA, for collection of equine oocytes

REF.: 19982/2281

**Heated aluminum block** for 50 ml tubes **REF.** : 23361/3200





#### **Ultrasound device Versana Active**

- Portable, easy-to-use ultrasound system for linear and convex sector
- High quality documentation and data transfer system
- Display modes: B-Mode, M-Mode
- PW Color Doppler with automatic calculation
- Realtime Triplex-Mode
- Coded Harmonic Imaging, CrossXBeam, Speckle Reduction Imaging (SRI-HD) for exceptional image quality
- Connectivity: USB, HDMI, Ethernet
- Monitor: 15,6" high-resolution LCD
- Dimensions: 39 x 5,8 x 36,2 cm (W x H x D)
- Weight: 5 kg with battery
- Electrical connection: 100-240 VAC/50-60 Hz

Ultrasound device Versana Active	REF. : 23360/0000
Convex sector probe, 6.0 - 10.0 MHz	REF. : 23360/0002
Endo-linear rectal probe, 5.0 - 10.0 MHz	REF. : 23360/0003



## **Ultrasound probe holder**

- Probe holder has a needle guide included and is used with the double lumen needle: the two spaces allow simultaneous or alternating aspiration and injection of fluids into and from the follicles
- OPU needle is connected to the aspiration and flushing pump for equine OPU, Ref. 23362/0002 (230 V) or 23362/0003 (115 V)

Probe holder for GE probe	REF. : 19009/3100
Probe holder for Esaote probe	REF.: 19009/3101
Probe holder for Sonosite probe	REF.: 19009/3102
Probe holder for BCF/Mindray probe	REF.: 19009/3103
Cover for probe holder, 144/package	REF. : 23360/1260
Double lumen needle, 12 G, 25"	
consists of outer needle and inner cannula	REF. : 19009/3105
Replacement needle, 12 G, 25"	REF.: 19009/3106



# OPU pump for follicle aspiration and flushing

## OPU pump for follicle aspiration and flushing, oocyte collection in mares with durable casing.

- Two pumps and a warming block are combined into one unit for convenient oocyte aspiration
- Pressure levels and hysteresis are programmable by the user
- The pump is operated by foot switches
- Electrical connection: 220–240 V/50–60 Hz; also available for 115 V (Ref. 23362/0003)

**OPU pump** for follicle aspiration and flushing **REF.**: 23362/0002

Stopper assembly

Snugly connects to 50 ml tubes, 1/package REF. : 23360/1100



## TRAINING AND SERVICE

## **Training and education**

Minitube cooperates with universities and leading Equine studs. The collective experience and knowledge is incorporated into our seminars where the latest technologies and practices are demonstrated and trained with course participants. With the courses being interactive workshops, presentations, discussions, demonstrations and practical work go hand in hand.

- Semen processing in the laboratory
- · Embryology / IVF
- Equine AI and ET
- Deep intrauterine insemination in horses

Besides these standard seminars, Minitube also offers individual seminars upon request. All participants in our seminars receive valuable seminar documentation and a certificate of participation.

Please contact us to get more information:

seminars@minitube.de



#### **Mobile lab service**

Minitube Middle East offers unique professional lab service to customers particularly in remote areas. The Mobile Lab is a van equipped with high-quality Minitube equipment to analyze and preserve/freeze animal semen or embryos.

Minitube Middle East offers the service to customers in the United Arab Emirates, Saudi Arabia and Oman, in regions which otherwise have no access to a professional laboratory for semen and embryo preservation.

Please contact us for further information about the service and if you would like to discuss how to construct your own mobile laboratory:

minitube@minitube.de



Minitüb is an ISO 9001:2015 certified company.

