



Stock Solution 100%
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APPLICATION

SpermFilter® Stock Solution 100% is a stock solution for semen preparation. It is an isotonic gradient for semen preparation with a density of approximately 1.12 g/ml. SpermFilter® Stock Solution 100% can be used for semen preparation for Intra Uterine Insemination (IUI), In Vitro Fertilization (IVF) and IntraCyttoplasmic Sperm Injection (ICSI).

For professional use only.

COMPOSITION

SpermFilter® Stock Solution 100% consists of silane-coated colloidal silica particles suspended in HEPES-buffered EBSS (Earle's balanced salt solution).

QUALITY CONTROL

- pH between: 7.20-7.90 (Release criteria: 7.20-7.60)
- Osmolality: 300-330 mOsm/kg
- Density: 1.1150-1.1250 g/ml
- Endotoxins (USP <85>): <0.5EU/ml
- Sterility test according to the current Ph. Eur. 2.6.1/USP <71>; No growth
- Human sperm survival assay:
 - % motility compared with control after 4 hours: ≥ 80%
 - % motility compared with control after 24 hours: ≥ 75%
- Chemical composition
- Use of Ph Eur or USP grade products if applicable
- Not MEA tested
- Certificate of analysis and MSDS are available upon request

SpermFilter® Stock Solution 100% is sterilized by aseptic processing techniques.

PRECAUTIONS AND WARNINGS

- Aseptic technique should be used to avoid possible contamination.
- Always wear protective clothing when handling specimens.
- All human organic material should be considered potentially infectious. Handle all specimens as if capable of transmitting HIV or hepatitis.
- Any serious incident (as defined in European Medical Device Regulation 2017/745) that has occurred should be reported to Gynotec B.V. and, if applicable, to the competent authority of the EU Member State in which the user and/or patient is established.

PRE-USE CHECKS

- Do not use the product if the seal of the container is opened or defect when the product is delivered.
- Do not use if the products shows any evidence of microbial contamination or becomes cloudy.
- Do not use after expiry date.
- Do not re-sterilize after opening.
- Keep in its original packaging until the day of use.
- Depending on the number of procedures that will be performed on one day, remove the required volume of medium under aseptic conditions in an appropriate sterile recipient. This is in order to avoid multiple openings/warming cycles of the medium. Discard excess (unused) media.

STORAGE CONDITIONS

- Store products between 2-25 °C. Once opened: store between 2-8 °C.
- Keep away from sunlight.
- After opening the container, do not use the product longer than 7 days. Sterile conditions must be maintained and product must be stored at 2°C.
- Discard the devices in accordance with local regulations for disposal of medical devices.

CALCULATIONS OF G-FORCES

The g-force of your centrifuge can be calculated using this formula:

$$g = \frac{r \cdot \omega^2}{9.80665}$$

$$rpm = \frac{r \cdot g}{9.80665}$$

$$rpm = 1.118 \cdot \sqrt{r \cdot g}$$

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INSTRUCTIONS FOR USE

Method
Each laboratory should establish its own validated procedures and protocols.

Instructions for preparation of gradients
Mix the density gradient bottles by 5 bottle inversions before use.

We advise to prepare a dual gradient system (45% - 90% or 40% - 80%) starting from SpermFilter® Stock Solution 100%. If preferred a multi-layer can be used as well (e.g. 45% - 70% - 90%). To prepare a 90% gradient, mix 1 part SpermTec® Wash or SpermWash® (distributed by Gynotec B.V.) with 9 parts SpermFilter® Stock Solution 100%. A 45% gradient is prepared by mixing 5.5 parts SpermTec® Wash or SpermWash® (distributed by Gynotec B.V.) with 4.5 parts SpermFilter® Stock Solution 100%. Alternatively any HEPES-buffered EBSS-based medium can be used for the preparation of the gradients.

Note: Gradients should be prepared and ISOed under sterile conditions (e.g. LAF bench ISO Class 5). For optimal results, prepare the gradients maximum 24 hours prior to use, store at 2-8 °C and warm gradients to room temperature or 37 °C one hour before use. Mix well after diluting the SpermFilter® Stock Solution 100% solution.

Instructions for sperm selection with fresh semen samples using a 45%-90% gradient system (but other gradients are possible)

- Transfer 2.5ml of the prepared 45% gradient into a sterile disposable centrifuge tube.
- Place 2.5ml of the prepared 90% gradient under the prepared 45% gradient. Take care that the two layers are distinctly separated. This is done by placing the tip of the pipette on the bottom of the test tube and slowly dispensing the 90% gradient. This two layer gradient is stable for up to two hours.
- Gently place up to 2.5ml of liquefied semen onto the 45% gradient using a transfer pipette. Do not use a higher volume than the volume of the individual gradient layers or more than 10⁸ cells.
- Centrifuge for 15 to 18 minutes at 350g to 400g.
- When this centrifugation is completed you may not be able to visibly see a pellet. If so, it is essential to continue the procedure with a second centrifugation of 3 to 5 minutes.
- Remove supernatant down to the pellet.
- Add 2-3ml of sperm washing medium (e.g. SpermTec® Wash or SpermWash® distributed by Gynotec B.V.) and resuspend the pellet.
- Centrifuge for 8 to 10 minutes at 300g. Higher sperm concentration will require the maximum 10 minutes centrifugation to ensure a complete and thorough sperm wash.
- Remove supernatant down to the pellet and repeat steps 6 and 7.
- Remove supernatant and replace with a suitable volume of appropriate medium.

Instructions for sperm selection with frozen semen samples: example using a 45%-90% gradient system (but other gradients are possible)

- Transfer 1ml of the prepared 45% gradient into a sterile disposable centrifuge tube.
- Place 1ml of the prepared 90% gradient under the prepared 45% gradient. Take care that the two layers are distinctly separated. This is done by placing the tip of the pipette on the bottom of the test tube and slowly dispensing the 90% gradient. This two-layer gradient is stable for up to two hours.
- Gently place the thawed semen sample onto the 45% gradient using a transfer pipette (0.5-1ml).
- Centrifuge for 8 to 10 minutes at 300g.
- Remove supernatant down to no less than the 0.5ml mark above the pellet.
- Add 2-3ml of sperm washing medium (e.g. SpermTec® Wash or SpermWash® distributed by Gynotec B.V.) and resuspend the pellet.
- Centrifuge for 8 to 10 minutes at 300g.
- Remove supernatant down to the pellet and repeat steps 6 and 7.
- Remove supernatant and replace with a suitable volume of appropriate medium.

PRE-USE CHECKS

- Do not use the product if the seal of the container is opened or defect when the product is delivered.
- Do not use if the products shows any evidence of microbial contamination or becomes cloudy.
- Do not use after expiry date.
- Do not re-sterilize after opening.
- Keep in its original packaging until the day of use.
- Depending on the number of procedures that will be performed on one day, remove the required volume of medium under aseptic conditions in an appropriate sterile recipient. This is in order to avoid multiple openings/warming cycles of the medium. Discard excess (unused) media.

STORAGE CONDITIONS

- Store products between 2-25 °C. Once opened: store between 2-8 °C.
- Keep away from sunlight.
- After opening the container, do not use the product longer than 7 days. Sterile conditions must be maintained and product must be stored at 2°C.
- Discard the devices in accordance with local regulations for disposal of medical devices.

CALCULATIONS OF G-FORCES

The g-force of your centrifuge can be calculated using this formula:

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TOEPASSING

SpermFilter® Stock Solution 100 is een stockoplossing voor de bereiding van sperma. Het is een isotonische gradiënt voor sperma voorbereiding met een densiteit van ongeveer 1.12 g/ml. SpermFilter® Stock Solution 100% kan gebruikt worden in combinatie met Intra Uteriene inseminatie (IUI), In Vitro Fertilizatie (IVF) en IntraCytoplasmatische sperma injectie (ICSI).

Enkel voor professioneel gebruik.

COMPOSITIE

SpermFilter® Stock Solution 100% bestaat uit silaan gecoate colloïdale silica partikels gesuspenderd in HEPES gebufferde EBSS (Earle's balanced salt solution).

KWALITEITSCONTROLE

- pH tussen 7.20-7.90 (vrijgave criteria: 7.20-7.60)
- Osmolaliteit: 300-330 mOsm/kg
- Densiteit: 1.1150-1.1250 g/ml
- Endotoxines (USP <85>): <0.5EU/ml
- Steriliteitstest volgens de huidige Ph. Eur. 2.6.1/ USP <71>; Geen groei
- Humane sperma overlevingstest:
 - % motiliteit vergeleken met controle na 4 uur: ≥ 80%
 - % motiliteit vergeleken met controle na 24 uur: ≥ 75%
- Chemische compositie
- Gebruik van Ph Eur of USP graad producten indien van toepassing
- Niet MEA getest
- Certificaat van analyse en MSDS zijn beschikbaar op aanvraag

Instructions for sperm selection with fresh semen samples using a 45%-90% gradient system (but other gradients are possible)

- Transfer 2.5ml of the prepared 45% gradient into a sterile disposable centrifuge tube.
- Place 2.5ml of the prepared 90% gradient under the prepared 45% gradient. Take care that the two layers are distinctly separated. This is done by placing the tip of the pipette on the bottom of the test tube and slowly dispensing the 90% gradient. This two layer gradient is stable for up to two hours.
- Gently place up to 2.5ml of liquefied semen onto the 45% gradient using a transfer pipette. Do not use a higher volume than the volume of the individual gradient layers or more than 10⁸ cells.
- Centrifuge for 15 to 18 minutes at 350g to 400g.
- When this centrifugation is completed you may not be able to visibly see a pellet. If so, it is essential to continue the procedure with a second centrifugation of 3 to 5 minutes.
- Remove supernatant down to the pellet.
- Add 2-3ml of sperm washing medium (e.g. SpermTec® Wash or SpermWash® distributed by Gynotec B.V.) and resuspend the pellet.
- Centrifuge for 8 to 10 minutes at 300g. Higher sperm concentration will require the maximum 10 minutes centrifugation to ensure a complete and thorough sperm wash.
- Remove supernatant down to the pellet and repeat steps 6 and 7.
- Remove supernatant and replace with a suitable volume of appropriate medium.

PRE-USE CHECKS

- Do not use the product if the seal of the container is opened or defect when the product is delivered.
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STORAGE CONDITIONS

- Store products between 2-25 °C. Once opened: store between 2-8 °C.
- Keep away from sunlight.
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CALCULATIONS OF G-FORCES

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INSTRUCTIES VOOR GEBRUIK

Methodes
Elk laboratorium zou zijn eigen geoptimaliseerde en gevalideerde labo procedures moeten raadplegen.

Instructies voor de bereiding van de gradiënten
Meng de densiteitsgradiënt flessen door 5 keer de fles om te draaien voor gebruik.

We raden aan om een dual gradiënt systeem (45%-90% of 40%-80%) te maken, startend van SpermFilter® Stock Solution 100%. Eventueel kan een multi-laag ook gebruikt worden (vb. 45%-70%-90%). Om een 90% gradiënt te maken, meng 1 deel SpermTec® Wash of SpermWash® (gedistribueerd door Gynotec B.V.) met 9 delen SpermFilter® Stock Solution 100%. Een 45% gradiënt wordt gemaakt door 5,5 delen SpermTec® Wash of SpermWash® (gedistribueerd door Gynotec B.V.) met 4,5 delen SpermFilter® Stock Solution 100%. Alternatiefv kan ook HEPES gebufferde EBSS gebaseerd medium kan als alternatief gebruikt worden voor de bereiding van gradiënten.

Note: Gradiënten zouden gemaakt en herpakt moeten worden onder steriele condities (vb. LAF bank ISO Class 5). Voor optimale resultaten, bereid de gradiënten maximum 24 uur voor gebruik en bewaar bij 2-8 °C en warm de gradiënten op tot kamertemperatuur of 37 °C een uur voor gebruik. Meng goed na het verdunden van de SpermFilter® Stock Solution 100% oplossing.

Instructies voor spermselectie met verse spermamonsters: voorbeeld met een 45%-90% gradiënt systeem (maar andere gradiënten zijn mogelijk)

- Prelever 2.5ml voorbereid 45% gradiënt in een steriel wewerp centrifugebusje.
- Plaats 2.5ml van de bereide 90% gradiënt onder de bereide 45% gradiënt laag. Zorg ervoor dat de twee lagen mooi gescheiden zijn. Dit wordt gedaan door de pipet op de bodem van het testbusje te plaatsen en traag de 90% gradiënt toe te voegen.
- Deze twee lagen gradiënt is stabiel gedurende twee uren.
- Plaats voorzichtig tot 2.5ml vervloeid sperma op de 45% gradiënt laag gebruikmakend van een transfer pipet. Gebruik geen grote volume dan het volume van de afzonderlijke gradiëntlagen en niet meer dan 10⁸ cellen.
- Centrifugeer 15 tot 18 minuten aan 350g tot 400g. Wanneer deze centrifugatie uitgevoerd is, kan het zijn dat u de pellet niet ziet. Als dit zo is, is het essentieel om met de procedure door te gaan door een tweede centrifugatie van 3 tot 5 minuten uit te voeren.
- Verwijder het supernatans tot aan de pellet.
- Voeg 2-3ml van het sperma wasmedium toe (bijv. SpermWash® / SpermTec® Wash gedistribueerd door Gynotec B.V.) en resuspendeer de pellet.
- Centrifugeer 8 tot 10 minuten aan 300g. Hogere spermconcentratie zal een maximum van 10 minuten centrifugatie vereisen om een complete en diepgaande sperma wasstap uit te voeren.
- Verwijder het supernatans tot aan de pellet en herhaal stappen 6 en 7.
- Verwijder het supernatans en vervang door een geschikt volume medium.

Instructies voor spermselectie met bevroren spermamonsters: voorbeeld met een 45%-90% gradiënt systeem (maar andere gradiënten zijn mogelijk)

- Prelever 1ml van de bereide 45% gradiënt in een steriel wewerp centrifugebusje.
- Plaats 1ml van de bereide 90% gradiënt onder de bereide 45% gradiënt laag. Zorg ervoor dat de twee lagen mooi gescheiden zijn. Dit wordt gedaan door de pipet op de bodem van het testbusje te plaatsen en traag de 90% gradiënt toe te voegen.
- Deze twee lagen gradiënt is stabiel gedurende twee uren.
- Plaats het ontdooid spermastaaf op de 45% gradiënt laag met een transferpipet (0.5 - 1ml).
- Centrifugeer 15-20 minuten aan 350g.
- Verwijder het supernatans tot niet minder dan de 0.5ml markering boven de pellet.
- Voeg 2-3ml van het sperma wasmedium toe (bijv. SpermWash® / SpermTec® Wash gedistribueerd door Gynotec B.V.) en resuspendeer de pellet.
- Centrifugeer 8 tot 10 minuten aan 300g.
- Verwijder het supernatans tot aan de pellet en herhaal stappen 6 en 7.
- Verwijder het supernatans en vervang door een geschikt volume medium.

PRE-USE CHECKS

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