ARTISS
[Solutions for Sealant]

PROVIDES TIME FOR
THE FINISHING TOUCH

Full surface adherence eliminating dead space

Application and Benefits in Burn Surgery
Specifically Designed

- ARTISS [Solutions for Sealant] is indicated as a tissue glue to adhere/seal subcutaneous tissue in plastic, reconstructive and burn surgery, as a replacement or an adjunct to sutures or staples.\(^2\)

- In addition, ARTISS is indicated as an adjunct to hemostasis on subcutaneous tissue surfaces.\(^2\)

How ARTISS Works

ARTISS is applied with a spray device to achieve an even and thin layer on the wound area.\(^3,4,7\)

The wound surface should be as dry as possible before application.\(^1\)

Upon mixing, soluble fibrinogen is transformed into a fibrin matrix that adheres to the wound surface and to the skin graft to be affixed.\(^6,7\)

(For detailed instructions how to prepare and apply the product, please see the SmPC.)

ARTISS sets in approximately 60 seconds; allowing time to manipulate and position the graft prior to polymerization.\(^1,5\)

After the graft has been applied, hold in the desired position by gentle compression for about 3-5 minutes to ensure ARTISS sets properly and adheres firmly to the surrounding tissue. The solidified fibrin sealant reaches its final strength in approximately 2 hours after application.\(^1\)

The adhesive properties of ARTISS provide full surface adherence of the graft to the wound bed, closing the space that exists when grafts are attached using point fixation techniques such as staples.\(^3\)

ARTISS eliminates the need for staple application or removal.\(^3\)
ARTISS [Solutions for Sealant] – first and only fibrin sealant custom designed for tissue adherence

ARTISS is a two-component fibrin sealant matrix of human fibrinogen and contains 4 units/mL of human thrombin which sets in approximately 60 seconds:¹,²

- allowing time to manipulate and position the graft prior to polymerization¹,³
- providing full surface adherence of the graft to the wound bed³

Unlike another fast-setting, hemostatic fibrin sealant, ARTISS contains a mixture of proteins, which play important roles in the wound healing and tissue regeneration process and help to extend clot stability, such as synthetic, non-bovine aprotinin.¹,⁶

According to in-vitro results, ARTISS clots serve as a provisional matrix that encourages adhesion and supports growth of cells involved in soft tissue repair, like keratinocytes, fibroblasts, and endothelial cells.⁶

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**Fig. 1: Mechanism of action.**

- The 2 components of Artiss imitate the last step of the coagulation cascade generating a fibrin clot with physiological clot properties²

- Morphology of human keratinocytes after 24 hours in contact with the Artiss clot. Red = Actin filaments; blue = Nuclei⁶
Clinical Evidence / Pivotal Study

The efficacy of ARTISS versus staples for skin graft adherence was demonstrated in a phase 3, multicenter, prospective, randomized, evaluator blinded clinical trial in 138 adult and pediatric burn patients. The study was designed to evaluate whether or not complete (100%) wound closure achieved 28 days after wound excision and skin grafting when ARTISS or staples were used.1,2

Study design

Each patient served as its own control, being treated with both FS 4IU VH S/D and staples on separate test sites. The test sites had to be either a single wound measuring between 2 and 8% TBSA (which could be split into two halves) or two comparable wounds each measuring between 1 and 4% TBSA. Both test sites were required to receive autologous split-thickness sheet skin grafts.

Efficacy Results

- The proportion of test sites with complete wound closure* was similar between the 2 treatments (ARTISS, 43.3%; staples, 37%).

- The lower limit of the 97.5% confidence interval of the difference between ARTISS and staples was -0.029, which is above the predefined noninferiority margin of -0.1.

Study Conclusion

The pivotal study concluded: ARTISS is at least as efficacious as staples at the 97.5% one-sided level for complete wound closure by day 28.3

†Blinded Review: reviewers were burn surgeons who were not involved with the study in any other way and who were unaware of treatments used in the study, treatment assignment, time point of assessment, and identity of the patient and operating surgeon.

*Full coverage of the wound with a contiguous layer of viable epithelium.
ARTISS [Solutions for Sealant] – for skin grafting in Burn Surgery

In the study, ARTISS was favored by investigators regarding method of fixation and quality of healing, and patients preferred ARTISS over staples because of less anxiety and pain regarding staple removal.3
Hematoma/Seroma reduction

Significantly fewer hematoma and seroma incidences occurred on Day 1 with the use of ARTISS (29.7%) compared to the use of staples (62.3%, p<0.0001). Minimizing hematoma and seroma incidences is clinically important because of the additional procedures, and associated costs, that are required to deal with these complications.

Patient satisfaction

58.7% of patients required additional pain medication during the staple removal process. ARTISS can help eliminate the use of staples, therefore relieving patient’s anxiety about staple removal and the pain associated with it.

Health resources needed for staple removal

In the study it was shown that staple removal is associated with a number of health resources, that also need to be considered from an economical perspective.

<table>
<thead>
<tr>
<th>Health Resource Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of staples used (median)</td>
<td>30 (range: 7 to 88)</td>
</tr>
<tr>
<td>Number of sessions required to remove staples (median)</td>
<td>1 (range: 1 to 2)</td>
</tr>
<tr>
<td>Number of persons involved in staple removal (median)</td>
<td>2 (range: 1 to 9)</td>
</tr>
<tr>
<td>Time (minutes) spent removing staples (median)</td>
<td>10 (range: 1 to 365)</td>
</tr>
<tr>
<td>Additional pain medication/sedation required for staple removal (%)</td>
<td>58.7% (74/126)</td>
</tr>
</tbody>
</table>

References:

2. Summary of Product Characteristics for ARTISS, Solutions for Sealant SPC, Vienna Austria, Baxter International Inc. 2010
In a phase III, multicentre, prospective, evaluator-blinded, randomized study comparing fibrin sealant with 4 I/U thrombin, vapor heated, and solvent/detergent treated (FS 4 IU VS S/D) to staples where patients served as their own control, FS 4IU VH S/D was used to affix sheet grafts at one test site (treatment) and staples used to affix sheet skin grafts at the other test site (control).
**ARTISS [Solutions for Sealant] is convenient and ready-to-use**

- **Premixed** ready-to-use without mixing or dilution required
- **Full surface adherence eliminating dead space**

ARTISS, slow-setting, vapor-heated and solvent/detergent treated fibrin sealant is developed by Baxter with over 30 years of successful fibrin sealant usage in all surgical specialties with no single case of hepatitis or HIV seropositivity. As with medicinal products manufactured from human plasma the possibility of transmitting infective agents cannot be totally excluded.

### Indications

**INDICATIONS:**

ARTISS is indicated as tissue glue to adhere/seal subcutaneous tissue in plastic, reconstructive and burn surgery, as replacements or adjuncts to sutures or staples. In addition, ARTISS is indicated as a hemostatic sealant to close surgical wounds and seal raw surfaces in the following surgical specialties:

- Plastic surgery
- Reconstructive surgery
- Burn surgery

**Contraindications:**

- Hypersensitivity to the active substances or to any of the excipients.
- Systemic administration of aprotinin.
- Intentional or unintentional intravascular application.
- Severe anaphylaxis. Such reactions may especially be seen if the preparation is applied repeatedly, or administered to patients known to be hypersensitive to aprotinin or any other constituents of the product.

**Precautions:**

- Unintentional intravascular application.
- Hypersensitivity to the active substances or to any of the excipients.
- Systemic administration of aprotinin.
- Intentional or unintentional intravascular application.
- Severe anaphylaxis. Such reactions may especially be seen if the preparation is applied repeatedly, or administered to patients known to be hypersensitive to aprotinin or any other constituents of the product.

**Special Warnings and Special Precautions for Use:**

- For intravenous use only. Do not apply intravenously. Life-threatening thrombembolic complications may occur if the preparation is unintentionally applied intravenously. Soft tissue injection of ARTISS carries the risk of local tissue damage.
- ARTISS is contraindicated for hemostasis and sealing in situations where local clotting of the sealant is required. Especially in cardio vascular procedures in which sealing of vascular anastomoses is intended. ARTISS should not be used for hemostasis and sealing in situations where local clotting of the sealant is required. Especially in cardiovascular procedures in which sealing of vascular anastomoses is intended. ARTISS should not be used for hemostasis and sealing in situations where local clotting of the sealant is required. Especially in cardiovascular procedures in which sealing of vascular anastomoses is intended. ARTISS should not be used for hemostasis and sealing in situations where local clotting of the sealant is required. Especially in cardiovascular procedures in which sealing of vascular anastomoses is intended. ARTISS should not be used for hemostasis and sealing in situations where local clotting of the sealant is required. Especially in cardiovascular procedures in which sealing of vascular anastomoses is intended.
- ARTISS contains synthetic aprotinin. Even in case of strict local application, there is a risk of anaphylactic reaction linked to the presence of aprotinin. The risk seems to be higher in cases where there was previous exposure, even if it was well tolerated. Therefore any use of aprotinin or aprotinin containing products should be recorded in the patients' records.
- In the event of anaphylactic or severe hypersensitivity reactions, administration to be discontinued and emergency measures are to be taken. In such cases, standard medical treatment for shock should be implemented.

**Adverse Reactions:**

- **Common:** pruritus, skin graft failure; **Uncommon:** ≥1/100 to <1/10): pruritus, skin graft failure; **Uncommon:** ≥1/100 to <1/10): pruritus, skin graft failure; **Uncommon:** ≥1/100 to <1/10): pruritus, skin graft failure; **Uncommon:** ≥1/100 to <1/10): pruritus, skin graft failure;

**Product List:**

<table>
<thead>
<tr>
<th>Product</th>
<th>Quantity per pack</th>
<th>Article code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTISS, Solutions for Sealant, frozen</td>
<td>2 ml (1 ml Fibrinogen Solution + 1 ml Thrombin Solution)</td>
<td>1</td>
<td>Please contact your local representative</td>
</tr>
<tr>
<td></td>
<td>4 ml (2 ml Fibrinogen Solution + 2 ml Thrombin Solution)</td>
<td>1</td>
<td>Country-specific codes</td>
</tr>
<tr>
<td></td>
<td>10 ml (5 ml Fibrinogen Solution + 5 ml Thrombin Solution)</td>
<td>1</td>
<td>Country-specific codes</td>
</tr>
<tr>
<td>Tisseel/Artiss Spray Set (10 pack)</td>
<td>1</td>
<td>0600067</td>
<td>Spray application for a single thin layer</td>
</tr>
<tr>
<td>Tisseel/Artiss Spray Set, single</td>
<td>1</td>
<td>0600066</td>
<td>Spray application for a single thin layer</td>
</tr>
</tbody>
</table>

**For detailed information please contact your local representative:**

[www.baxterbiosurgery.com](http://www.baxterbiosurgery.com)

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For the Precautions, incompatibilities and interactions, please refer to your locally approved full SmPC.