

Sefar Medical | Negative Pressure Wound Therapy

Facts

Application	Negative pressure wound therapy (NPWT) for advanced wound care healing processes
Customer	Manufacturers and OEMs for advanced wound care therapy
Solution	Monofilament fabric layer (direct contact with the wound)
Fabric type	SEFAR MEDIFAB ® 07-190/70
Fabrication solutions	<ul style="list-style-type: none"> ■ ribbons ■ shapes
Quality standards	<ul style="list-style-type: none"> ■ ISO 9001 ■ ISO 13485 ■ ISO 10993

Customer problem / requirement

A doctor may recommend negative pressure wound therapy (NPWT) for the following cases: burns, pressure ulcers, diabetic ulcers, chronic (long-lasting) wounds or injuries. This method to heal wounds is especially recommended for long lasting wounds, realizing high amount of exudates.

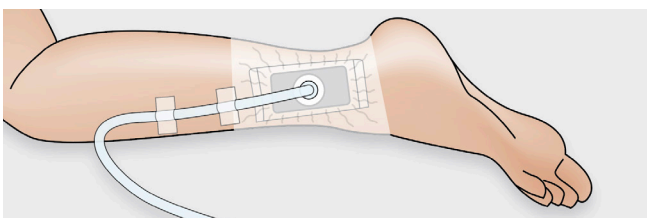
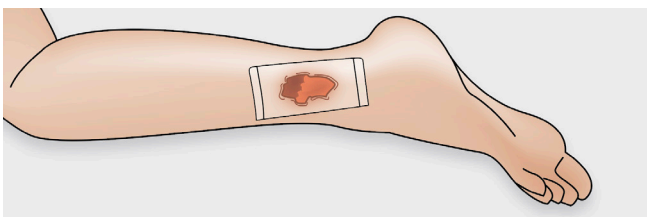
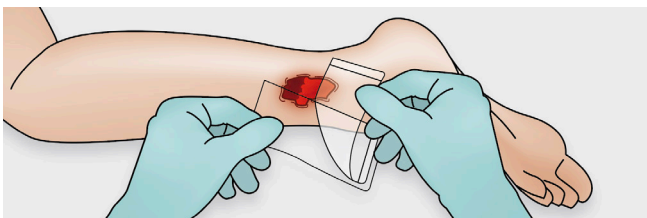
Chronic wounds are an increasing problem in a steadily ageing population. If a wound remains without signs of healing for more than eight weeks, it is referred to as chronic. Most often, these wounds develop as a result of circulatory disorders, diabetes mellitus or a weakened immune system.

Since the treatment process of chronic wounds often lasts for months and years, it is also associated with considerable costs.

Why negative pressure wound therapy

NPWT makes a significant contribution to accelerating wound healing, reducing costs, accelerating the healing process and leads to a substantial increase in life quality for patients.

It consists of applying a sponge (foam made of different polymer materials) into the wound bed and generating vacuum pressure via an external pump. Whilst secretions are aspirated continuously or at intervals, the formation of the granulating tissue in the wound bed is «stimulated» by the foam. Depending on the extent of the wound and the indication, different kinds of pumps are used, either mobile systems or «at bed» systems. The negative pressure on the wound is automatically regulated. Several case studies demonstrate that NPWT has a more positive effect on wound healing compared to conventional wound treatment.



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The advantages of NPWT therapy

The advantages of negative pressure wound therapy are

- high output of exudates – so the wound remains «clean»
- reducing the risk of infection in the wound
- the foam stimulates formation of granulating tissue
- closure of the wound (wound edge) is optimized

In burns, NPWT supports the suction of wound secretions and promotes blood circulation. It is thereby assumed that negative pressure wound treatment can lead to a better supply of oxygen and nutrients to a burn wound and thus contribute to faster healing.

How negative pressure wound therapy works

The best pressure for wound healing appears to be approximately 125 mm Hg, using an alternating pressure cycle of five minutes of suction followed by a further two minutes of suction.

Animal studies have demonstrated that this technique

- optimizes blood flow in the wound bed
- decreases local tissue swelling
- removes excessive fluid that can slow cell growth and proliferation in the wound bed
- decreases the number of bacteria

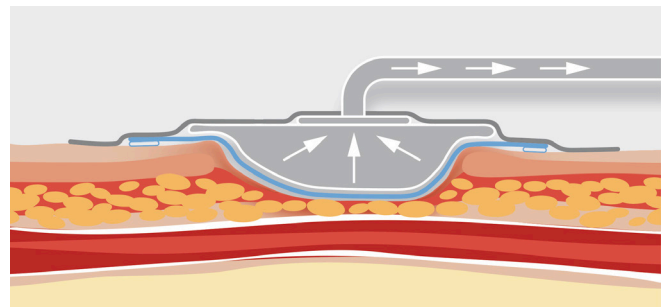
Additionally, intermittent low pressure alters the structure of the cells in the wound bed, triggering a cascade of intracellular signals that increase the rate of cell division and the formation of granulation tissue.

Fabrics for negative pressure wound therapy


Wound dressings for NPWT should follow certain requirements. Primarily, the dressing is a protection layer between the woundbed and the foam. A high flow rate is required for optimal removal of the exudates. The main function is the prevention of the foam ingrowing into the wound-bed. This is the main problem occurred during NPWT, causing pain to the patient during dressing changes. Another side effect of using a separation layer is the protection against irritation and maceration of healthy skin at the edges of the wound.

Recommendation for wound dressing

SEFAR MEDIFAB® 07-190/70. This woven fabric, made of 100 % polyester (PET), meets all these requirements and is ideally suited for use in advanced wound care solutions, especially for negative pressure wound therapy.



Graphic description

-  SEFAR MEDIFAB® 07-190/70 fabric layer
-  Soft port to NPWT device
-  Absorbing media
-  Medical cover membrane



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Specification of SEFAR MEDIFAB® 07-190 / 70

	Norm	Value	Tolerance	Unit
Thickness	ISO 5084	65		µm
Weight		16		g/m ²
Mesh opening warp	ASTM E11	190	(+15/-15)	µm
Mesh opening weft	ASTM E11	190	(+15/-15)	µm
Mesh count warp	ASTM E11	44		1/cm
Mesh count weft	ASTM E11	44		1/cm
Yarn diameter warp		37		µm
Yarn diameter weft		37		µm
Open area		70		%
LAL		0	(+0.125/-0)	EU/ml
Hämo		0	(+0.03/-0)	Hemolysis value

Advantages of SEFAR MEDIFAB®

Advantages of SEFAR MEDIFAB® 07-190/70 for NPWT

- no adhesion to the wound bed – protection of the granulation fabric
- no fiber loss, no particle loss or cytotoxic substances into the wound
- protective function – no ingrowth of NPWT foam
- high liquid permeability/throughput
- mechanical stability
- can remain in the wound whilst foam changes/shortens therapy time
- painless dressing change as no ingrowth into the wound bed
- drainage function
- maintains moist wound climate and gas exchange (oxygen, carbon dioxide, water vapor)
- converting in a class 7 cleanroom according to ISO 14644



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Why choose SEFAR MEDIFAB® fabrics for negative pressure wound therapy

SEFAR MEDIFAB® fabrics are woven structures composed of monofilament yarns, typically polyester and polyamide. The materials are utilized for a wide range of medical applications. All SEFAR MEDIFAB® fabrics are medical washed. This special washing and heat setting line is validated in accordance to ISO 13485. Evidence of process ability is shown by product verification of representative reference products (biocompatibility tests), while evidence of process stability and process reliability is shown by analysis of process control data (LAL and hemolysis tests on each production lot).

SEFAR MEDIFAB® fabrics pass all relevant biocompatibility tests of ISO 10993 (parts 5, 6, 10, 11, 18) and USP Class VI. In addition, certified tests prove that the fabrics are non-cytotoxic, non-hemolytic, non-pyrogenic and show no sensitization.

Sefar solution provider

A global team of experts allows Sefar to support the R&D departments of our customers worldwide, therefore, enabling the quick development of innovative and sustainable solutions. Sefar has the experience, the know-how and the corresponding processing capabilities for a wide range of materials.

Sefar's expertise covers all processes to convert mesh into customer-specific solutions, such as shaped, pleated, coated or sewed products.

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Digital vCard
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with your mobile phone

Fitness of Use: It is the sole responsibility of the buyer to determine the fitness of use for their application, and in doing so ensure that all local, state and federal regulations are followed. We expressly point out that the SEFAR MEDIFAB® brand products offered are not suitable for medical implants and/or as implant components. In the event of your company and/or any of your end customers using our products for such applications or supplying them to third parties, it will be necessary for us to close a formal liability exclusion agreement with you. In such case, please contact us immediately. Many thanks for your understanding.

