The power of water

LAVANOX-Serag®

Wound irrigation solutions
Wound gels

LAVANOX-Serag®
wound irrigation
solution

LAVANOX-Serag®
wound spray

LAVANOX-Serag®
wound spray gel

LAVANOX-Serag®
wound gel

SERAG
WIESSNER

Reliably protects against viruses, fungi, spores and bacteria [1,5,6]

Reliably eliminates wound odours

Fast and effective mechanical debridement of the wound

Product description

LAVANOX-Serag® wound irrigation solution and LAVANOX-Serag® wound spray are medical devices based on an electrochemically activated mineral salt solution with <0.08% sodium hypochlorite/hypochlorous acid (NaOCl/HOCl). The sodium hypochlorite/hypochlorous acid contained in LAVANOX-Serag® is a reliable and effective preservative and makes LAVANOX-Serag® a well-tolerated and efficient wound irrigation solution. The mechanical effect of LAVANOX-Serag® ensures a thorough cleansing of the wound and surrounding area, thus creating a milieu that promotes healing. It also eliminates unpleasant wound odours quickly and reliably.

The preservative sodium hypochlorite/hypochlorous acid (NaOCl/HOCl) reduces the growth of gram-negative and gram-positive bacteria (e.g. Pseudomonas aeruginosa, MRSA and MRE), viruses and fungi in the solution.

Indications for use:

LAVANOX-Serag® is used for the cleansing, moistening, mechanical decontamination and prevention of infection of the wound; it is suitable for both acute and chronic wounds, especially contaminated and dirty wounds with a high risk of infection. LAVANOX-Serag® helps to remove biofilms and fibrinoid residues efficiently and gently and enables a relatively painless removal of dressings that are encrusted and difficult to detach. LAVANOX-Serag® wound irrigation solution 1000 ml is suitable for use in negative pressure wound therapy (NPWT).

Cleansing and infection prophylaxis

LAVANOX-Serag® wound irrigation solution

Application

The wound should first be cleaned to remove dirt, blood and residues. For this, the affected areas are rinsed with LAVANOX-Serag® or moistened with several puffs of spray. Rinsing with another solution is not necessary after using LAVANOX-Serag®. There are no restrictions regarding the frequency and duration of use.

The application of LAVANOX-Serag® does not cause any irritation or itching and only minimal pain.

Composition

Water, <0.08% sodium hypochlorite/ hypochlorous acid (electrochemically activated mineral salt solution)

Shelf-life

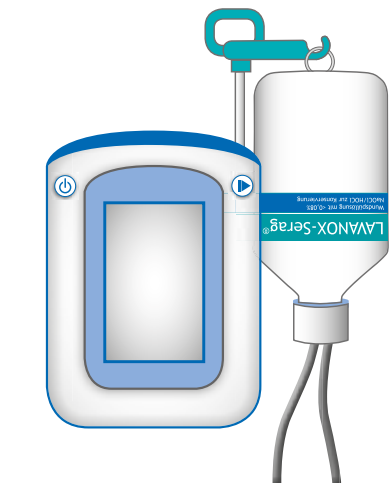
after first opening:
12 weeks

after manufacture:
2 years

Effective mechanical debridement

The electrolysis process reduces the cluster size of the water from 15-20 molecules to approx. 5-7 molecules, thereby greatly reducing the surface tension.[1,4] This enables effective cleaning in even the most difficult to access wound areas.[1,4] This mechanical rinsing effect allows LAVANOX-Serag® to significantly reduce the microbial load of the wound and achieve an effective and fast cleaning performance.[8] Furthermore, if used regularly, it can prevent an infection of the wound.

Article	Quantity	Art. No.	PIP-Code
Wound irrigation solution	1 x 250 ml	017025	11869876
Wound irrigation solution	6 x 1000 ml	017027	13332614 (for NPWT)
Wound spray	1 x 75 ml	017043	11869899



Suitable for use in negative pressure wound therapy (NPWT).

Hydrogel for spraying

LAVANOX-Serag® wound spray gel

Innovative dosage form

Excellent adhesive properties

Reliably eliminates wound odours

Product description

LAVANOX-Serag® wound gel and LAVANOX-Serag® wound spray gel are based on an electrochemically activated mineral salt solution containing <0.06% sodium hypochlorite/ hypochlorous acid (NaOCl/HOCl) as preservative and lithium-magnesium-sodium silicate as gelling agent.
LAVANOX-Serag® hydrogels keep the wound moist for a long period of time, and their application causes no irritation or itching and only minimal pain.

Indications for use:

LAVANOX-Serag® wound gel and wound spray gel are used for the moistening, cleaning and mechanical decontamination of acute and chronic wounds. They support the autolytic debridement of the wound and help prevent infection. LAVANOX-Serag® hydrogels are very suitable for moistening and, thanks to their effective cleaning properties, promote the physiological healing conditions.

The spray head of the LAVANOX-Serag® wound spray gel makes it ideal for quickly covering extensive wounds. It can be applied easily and quickly and remains in the wound as a hydrogel.

Application

Before the first application and each time the dressing is changed, the wound should first be cleaned with LAVANOX-Serag® wound irrigation solution or LAVANOX-Serag® wound spray. The LAVANOX-Serag® wound gels can be applied to the affected

Highly viscous hydrogel in the tube

LAVANOX-Serag® wound gel

areas several times a day and used in combination with compresses, plasters and other bandages or dressings. There are no restrictions regarding the frequency and duration of use.

Shake the bottle of LAVANOX-Serag® wound spray gel well before use, then spray the gel on with several puffs from a short distance. The solution solidifies immediately into a well-adhering hydrogel.

The LAVANOX-Serag® wound gel in the tube can be applied evenly to the wound and surrounding area using, for example, a sterile spatula. Thanks to the outstanding viscosity, LAVANOX-Serag® wound gel adheres well and keeps the wound and surrounding area moist for a long period of time.

Shelf-life

after first opening:
12 weeks

after manufacture:
3 years

Composition

Water, <0.06 % sodium hypochlorite/hypochlorous acid (electrochemically activated mineral salt solution), lithium-magnesium-sodium silicate

NEW! LAVANOX-Serag® wound gel in the 50 ml tube

Excellent adhesive properties

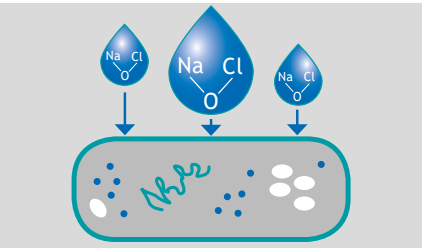
Tube with applicator

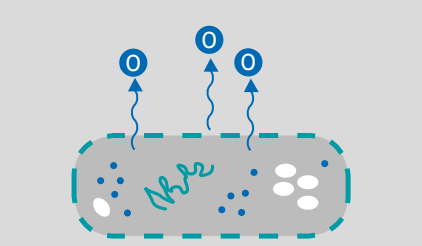
Reduces the growth of biofilm

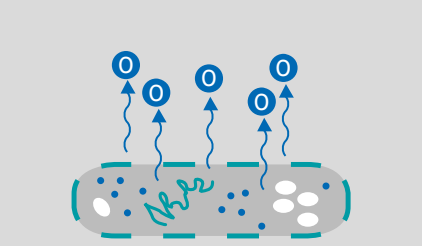
Article	Quantity	Art. No.	PIP-Code	
Wound spray gel	1 x 75 ml	017073	11869882	
Wound gel tube	1 x 50 ml	017075	16043833	NEW

Mechanism of action, effectiveness, tolerability and recommendations for use of NaOCl/HOCl

Simplified representation of the preservative properties of NaOCl/HOCl on a bacterium







Mechanism of action

The preservative sodium hypochlorite/hypochlorous acid (NaOCl/HOCl) is an effective oxidant that splits off and releases oxygen (O). This released oxygen impairs the permeability of the cell wall of pathogens such as bacteria (including Pseudomonas aeruginosa, MRSA/MRE), viruses and fungi and ensures an excellent mechanical debridement due to the reduced surface tension. Microorganisms can no longer withstand the osmotic pressure, and the microbial load is reduced.[1,3,4]

Once the oxygen has been split off from the sodium hypochlorite/hypochlorous acid, the substance reacts back to its natural starting components, water and salt.[4]

Sodium hypochlorite/hypochlorous acid is also produced by the body itself as a defence against microorganisms in lysosomes and supports the body's own self-healing process. The concentration of "active chlorine" is thereby sufficiently low to facilitate an excellent wound healing milieu without damaging human tissue.[3]

Effectiveness

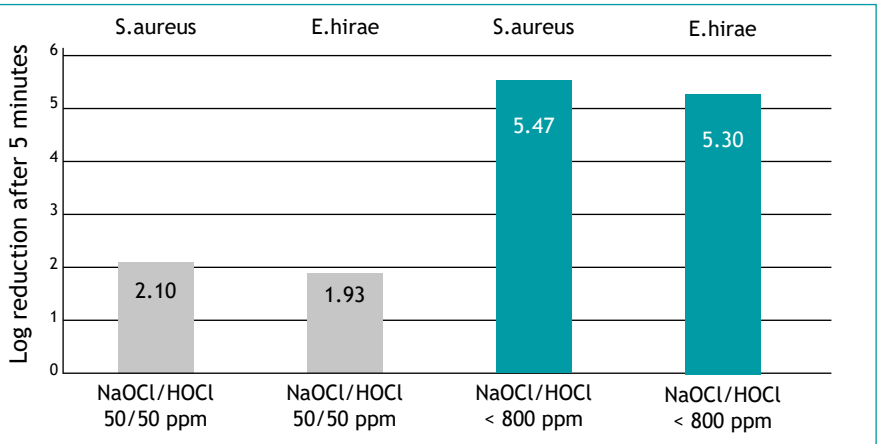
The antimicrobial effectiveness of two wound irrigation solutions containing the preservative NaOCl/HOCl was examined in the laboratory for the two test microbes S. aureus and E. hirae. The irrigation solution with 50/50 ppm achieved a significantly weaker antimicrobial efficacy (reduction of less than 3 log) than the more highly concentrated solution with 800 ppm.[7]

Tolerability

Irrigation solutions containing the preservative NaOCl/HOCl (800 ppm) are very well tolerated. This excellent tolerability was demonstrated in cytotoxicity analyses and in the HET-CAM test (chicken embryo test).[1]

The allergy test (patch test) shows that there is no sensitisation and that no toxic-irritative intolerances occur.[1] In the Consensus on Wound Antisepsis 2018 [9], irrigation solutions with NaOCl/HOCl are classified as

In vitro comparison of antimicrobial efficacy [7]



* organic load with 3.0 g/L bovine albumin + 3.0 ml/L sheep erythrocyte

being the first choice for a wide range of applications and for the decontamination of acute and chronic wounds.

Cells in healthy tissues have endogenous protective mechanisms against the redox processes taking place with NaOCl/HOCl and are not damaged.[4]

A prospective clinical comparative study carried out in 2019 demonstrated that irrigation solutions containing the preservative NaOCl/HOCl (800 ppm) are comparable with respect to pain perception and tolerability to the gold standard wound irrigation solution based on 0.04% polyhexanide.[8]

Recommendations for use of NaOCl/HOCl [9]

Indication	Antiseptic agent* of	
	1st choice	2nd choice
Critically colonized and infection-prone wounds	PHMB	NaOCl, hypochlorite, silver, OCT/PE
Burn wounds	PHMB	NaOCl/HOCl
Bite, stab and gunshot wounds	PVP-iodine	OCT/PE
MRE colonised or infected wounds	OCT/PE	OCT, PHMB, silver
Decontamination of acute and chronic wounds	NaOCl/HOCl, PHMB, Octenidin	OCT/PE
Peritoneal irrigation	NaOCl/HOCl	-
Risk of CNS exposure	NaOCl/HOCl	-
Wounds with no possibility of drainage	NaOCl/HOCl	-

Recommendation for indication-based choice of antiseptic agents[9]

*Abbreviations: PHMB - polyhexanide, NaOCl/HOCl - sodium hypochlorite/hypochlorous acid, OCT - octenidine dihydrochloride, OCT/PE - octenidine dihydrochloride/phenoxyethanol, PVP-iodine - povidone-iodine, MRE - multi-resistant pathogens, CNS - central nervous system

The anticipated risks associated with the intended use of the product are indicated in the instructions for use, which are available on the SERAG-WIESSNER website at www.serag-wiessner.de.

Literature

1 Brill FHH. Data on file. 2013
2 Kammerlander G, Assadian O, Eberlein T, Zweitmuller P, Luchsinger S, Andriessen A. A clinical evaluation of the efficacy and safety of singlet oxygen in cleansing and disinfecting stagnating wounds. J Wound Care. 2011 Apr;20(4):149-50
3 Kramer A. Wundantiseptik. ARS MEDICI. 2016 (9): 419-426
4 Lorberth J, Massa W. Zu den chemischen Grundlagen der Wirkung von Steralythen. Wund Management 2012 (3): 52-54
5 Möller A, Splieth B, Schmitz M, Eberlein T. Produkte auf Basis elektrochemischer Aktivierung (ECA) im erweiterten medizinischen Einsatz. Medizin & Praxis. 2016
6 Anna-Lena Severing, Julian-Dario Rembe, Verena Koester, Ewa K. Stuermer. Safety and efficacy profiles of different commercial sodium hypochlorite/hypochlorous acid solutions (NaClO/HClO): antimicrobial efficacy, cytotoxic impact and physiochemical parameter in vitro, Journal of Antimicrobial Chemotherapy 2018 Nov: 356-372
7 Brill FHH. Data on file. 2018
8 Eberlein T, data on file. 2019
9 Kramer A., Dissemond J, Willy C, Kim S, Mayer D, Papke R, Tuchmann F, Daeschlein G, Assadian, O. Auswahl von Wundantiseptika: Aktualisierung des Expertenkonsensus 2018. Wundmanagement 2019; 13 (Suppl.): 3-23

Manufacturer:

Prontomed GmbH
Am Bahndamm 70
32120 Hiddenhausen
Germany

Distributed by:

SERAG-WIESSNER GmbH & Co. KG
Zum Kugelfang 8 - 12
95119 Naila/Germany

+ 49 9282 937-0
+ 49 9282 937-9369

Export Department:
+ 49 9282 937-230
+ 49 9282 937-9785

info@serag-wiessner.de
www.serag-wiessner.de

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