SAFER. STRONGER. FASTER.

STOPS BLOOD LOSS FAST.

SEAL
HEMOSTATIC WOUND SPRAY

Your frontline defense for life-threatening bleeding emergencies.

Available in 3 sizes.

Over the Counter:
Small: 1.5oz

Professional Use:
Medium: 2.5 oz
Large 7.1 oz

- Natural biomaterial.
- Highly effective in stopping severe bleeding quickly.
- Acceleration of wound closure.
- Ability to cover complex wound geometries.
- Capability to reach and treat hard-to-access wounds.
- Ideal for various emergencies including accidents and violent incidents.
- Ensure a quick response with SEAL's compact and easy-to-use-design.
- Simple and painless removal with saline rinse.

High-Pressure Spray
Empties in under 5 seconds
for quick and targeted coverage.

Rapid Clotting
Stops bleeding within seconds

No Exothermic Reactions
Ensures safe applications.

Blood-Activated
Not activated by moisture or water;
works only upon blood contact.

Cold Propellant as Vasoconstrictor
SEAL's cold propellant swiftly minimizes blood flow.

Instant Deployment
No training required; simply shake, point, and spray.

All-Weather Applicability
Performs in diverse conditions,
ensuring focused spraying at 1 meter.

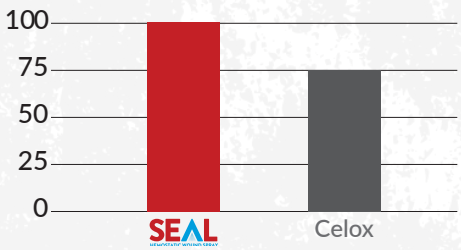
Long Shelf Life & Stability
2.5 years without refrigeration.

BC3 Duns Number
08108459

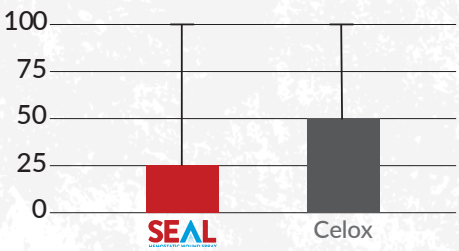
Cage Code
835X2

NAICS Codes	NAICS Title
423450	Medical, Dental, And Hospital Equipment And Supplies Merchant Wholesalers
313210	Broadwoven Fabric Mills
325998	All Other Miscellaneous Chemical Product And Preparation Manufac-turing
339112	Surgical And Medical Instrument Manufac-turing
339113	Surgical Appliance And Supplies Manufacturing
423490	Other Professional Equipment And Supplies Merchant Wholesalers
424210	Drugs And Druggists' Sundries Merchant Wholesalers

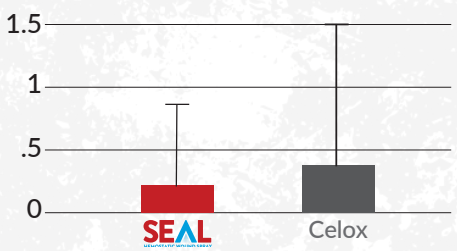
Survival Rate [%]



Blood loss amount [g]



Bleeding Time [min]



Choose SEAL – Your trusted partner in emergency hemorrhage control.

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WE ACCEPT:
Visa
Mastercard
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SEAL Hemostatic Wound Spray: Revolutionizing Hemorrhage Control

Be Prepared for Any Emergency

Meet the SEAL Hemostatic Wound Spray, a revolutionary advancement for immediate and efficient hemorrhage control. Whether it's car accidents, workplace injuries, gunshot wounds, or stabbings, SEAL is your frontline defense in life-threatening bleeding emergencies, providing a fast-acting and reliable solution for enhancing survival and recovery chances.

Key Features:

- **High-Pressure Spray**: Empties in under 5 seconds for quick and targeted coverage.
- **Rapid Clotting**: Stops bleeding within seconds.
- **No Exothermic Reactions**: Ensures safe application.
- **Blood-Activated**: Not activated by moisture or water; works only upon blood contact.
- **Cold Propellant as Vasoconstrictor**: SEAL's cold propellant swiftly minimizes blood flow.
- **Instant Deployment**: No training required; simply shake, point, and spray!
- **All-Weather Applicability**: Performs in diverse conditions, ensuring focused spraying at 1 meter. - **Long Shelf Life & Stability**: 2.5 years without refrigeration, stable up to 120°F.

Available Sizes and Pricing:

1. **1.5 oz. (Over-the-Counter)**
   - Molle Pouch Available -

2. **2.5 oz. (Professional Use Only)**
   - Molle Pouch Available -

3. **7.1 oz. (Professional Use Only)**

4. **2.8 oz. (Veterinary Use)**

Experience the SEAL Advantage:

SEAL Spray's accessible and efficient design makes it an indispensable companion for professional first responders and a vital addition to personal and professional emergency kits.

- **Versatile Application**: Ideal for various emergencies including accidents and violent incidents.
- **Convenient and Portable**: Ensure quick response with SEAL's compact and easy-to-use design. - **Easy Removal**: Simple and painless removal with saline rinse.

Don't Settle When It Comes to Safety

Opt for SEAL Hemostatic Wound Spray and arm yourself, your loved ones, and your team with unparalleled hemorrhage control. Invest in the robust protection and peace of mind that SEAL brings, ensuring readiness and safety in any situation.

Website: [www.bc3tech.com]
Email: [info@bc3tech.com]

Choose SEAL — Where Innovation, Safety, and Efficiency Converge. Your trusted partner in emergency hemorrhage control.

BC3 Technologies

MADE IN THE USA

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SEAL

HEMOSTATIC WOUND SPRAY

SEAL Hemostatic Wound Spray

BC3 Technologies has revolutionized wound treatment with its newest product, SEAL Hemostatic Wound Spray. This remarkable spray contains a highly effective form of chitosan, a natural polysaccharide known for its anti-hemorrhagic properties. SEAL has been extensively tested and confirmed to be highly effective in stopping severe bleeding, making it an excellent option for treating wounds that would otherwise be life-threatening. Moreover, using chitosan on traumatic skin lesions can significantly lower the risk of complications, increase the likelihood of survival during the acute healing phase, and ultimately decrease the total cost of treatment. SEAL Hemostatic Wound Spray from BC3 is the reliable solution for severe bleeding wounds.

The properties of SEAL can be summarized as follows:

- Natural biomaterial.
- Highly effective in stopping severe bleeding quickly.
- Acceleration of wound closure.
- Ability to cover complex wound geometries.
- Capability to reach and treat hard-to-access wounds.

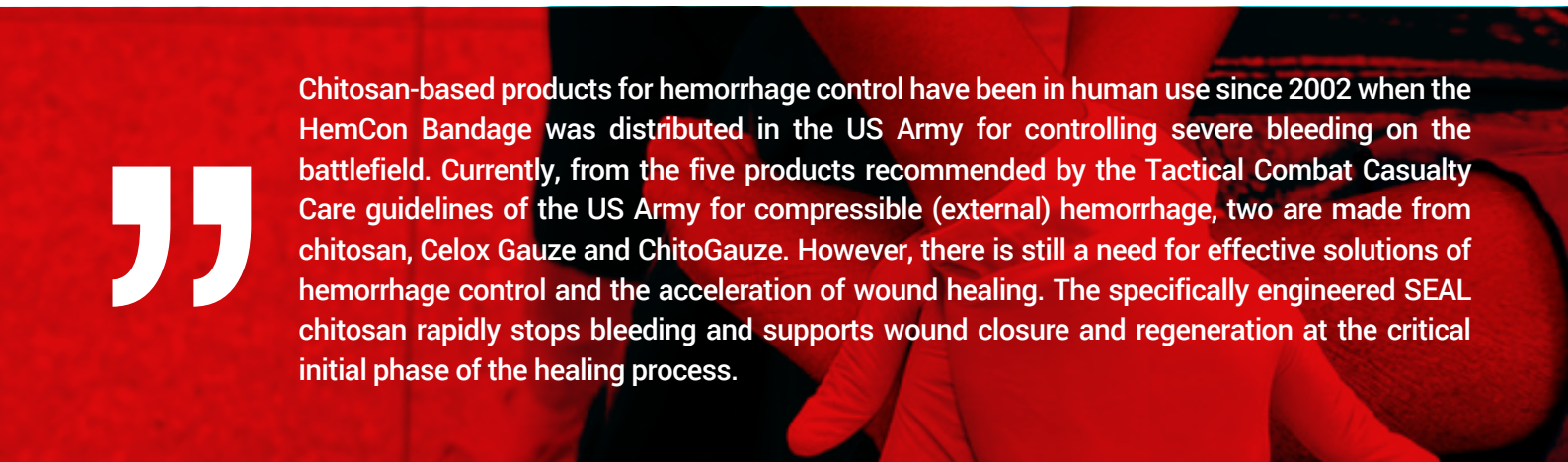
Background

Wound management remains a challenging task. Wound healing involves multiple cell populations, the extracellular matrix and the action of soluble mediators such as growth factors and cytokines. Although the process of healing is continuous, it can be divided into four phases: 1) coagulation and hemostasis, 2) inflammation, 3) proliferation, and 4) remodeling with scar tissue formation. The approach to wound management will effectively influence the outcome of the healing process [1].

Traumatic injuries pose a particular challenge, as a sequence of life-threatening conditions can occur simultaneously, including hemorrhage, impaired resuscitation, shock, inflammation, and coagulopathy. Proper management of a massively bleeding trauma patient requires early identification of the bleeding source, followed by prompt measures to minimize blood loss, restore tissue perfusion, and achieve hemodynamic stability.

The ideal topical product to treat wounds should be biocompatible and nontoxic and be able to enhance healing, without having adverse effects on the natural process of tissue regeneration. Chitosan seems ideal for dermal applications, as it is highly biocompatible, biodegradable, nontoxic, and provides strong hemostatic and antimicrobial properties. Numerous studies have shown the benefit of chitosan during all four phases of the wound healing process, leading to reduced healing times of skin wounds [2,3].

Chitosan is well-known for its potent hemostatic properties that don't rely on any aspect of the typical blood coagulation cascade. Instead, hemostasis is achieved through a combination of linkages (adherence) to red blood cells and tissues, forming a physical barrier around the severed vessels [4].



Chitosan-based products for hemorrhage control have been in human use since 2002 when the HemCon Bandage was distributed in the US Army for controlling severe bleeding on the battlefield. Currently, from the five products recommended by the Tactical Combat Casualty Care guidelines of the US Army for compressible (external) hemorrhage, two are made from chitosan, Celox Gauze and ChitoGauze. However, there is still a need for effective solutions of hemorrhage control and the acceleration of wound healing. The specifically engineered SEAL chitosan rapidly stops bleeding and supports wound closure and regeneration at the critical initial phase of the healing process.

Properties of SEAL

SEAL Hemostatic Wound Spray is composed of chitosan dry powder in spray form that provides a physical barrier or seal to stop the flow of blood. When sprayed on a wound and upon contact with blood or exudate, in combination with manual pressure to the wound, SEAL quickly forms a strong seal that completely covers the wound.

SEAL is available in three different sizes:

Model	Volume
Small **(OTC)**	1.5 oz
Medium	2.5 oz
Large	7.1 oz

SEAL Hemostatic Wound Spray combines two major innovative aspects which are 1) the specific activation of chitosan to yield a particularly potent hemostatic material, and 2) the application as sprayable product.

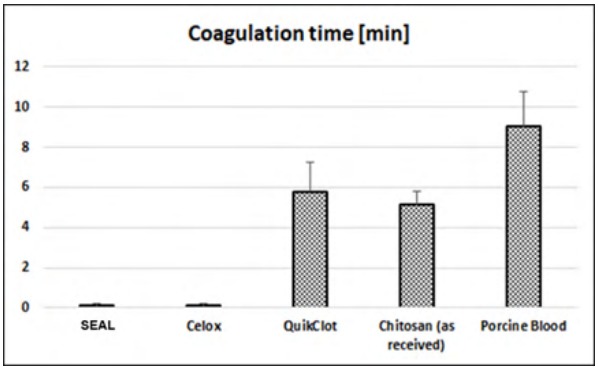
Advantages of SEAL

Key Attribute	SEAL Aerosolized Chitosan	Chitosan Granules	Chitosan Bandages
Rapid, 5-second administration	✓	✓	✗
Ease of use in wind and rain	✓	✗	✓
Deep penetration of Wound Architecture	✓	✗	✓
Ultra-Compact	✓	✗	✗
Touch-free user application	✓	✓	✗
Enables expedited triage process	✓	✗	✗
Use in Low-light	✓	✗	✓

It is well-known that chitosan induces blood clotting by electrostatic interaction between its positively charged glucosamine subunits and negatively charged blood cells. In SEAL, the properties of chitosan are fine-tuned for maximum electrostatic potential and binding capacity towards blood cells.

Testing of SEAL in Porcine Blood (in vitro)

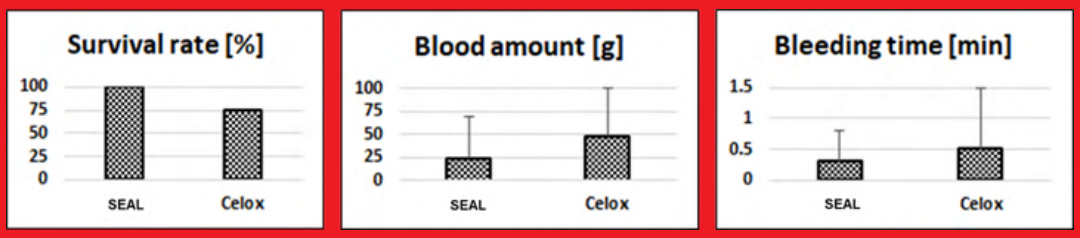
The efficacy of SEAL to stop bleeding has been compared to hemostatic agents used in the military (Celox, QuikClot) by analyzing coagulation times in porcine blood. SEAL and Celox lead to immediate blood clotting. In contrast, with raw chitosan (as received) and QuikClot it takes approx. 5-6 min for blood to coagulate. As reference, porcine blood without hemostatic agent coagulates after approx. 9 min in these experiments.



Coagulation times of porcine blood after addition of hemostatic agents.

Performance of SEAL in Severe Bleeding Model (in vivo).

SEAL was tested against Celox in the swine femoral artery injury model which is the standard model of most severe bleeding for hemostatic agents used in the military. While the mean bleeding time was similar between the two products, post-treatment blood loss was half after treating with SEAL compared to Celox, confirming the high hemostatic efficacy. The survival rate of the SEAL group was 100% and that of the Celox group 75%. Both gross necropsy (full cranial, thoracic and abdominal evaluation) and histopathology of the application site and organs (lung, liver, kidney, and pancreas, among others) did not show any signs of tissue or organ damage related to the application of the product. SEAL proved to be highly efficient and safe.



Survival rate, blood amount and bleeding time of SEAL compared to Celox in severe bleeding model.

Contact

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References

[1] T. Velnar et al., The wound healing process: an overview of the cellular and molecular mechanisms, J Int Med Res 2009;37:1528-42.
[2] R. A. A. Muzzarelli, Chitins and chitosans for the repair of wounded skin, nerve, cartilage and bone, Carbohydr Polym 2009;76:167-82.
[3] B. Maldonado-Cabrera et al., Therapeutic effects of chitosan in veterinary dermatology: A systematic review of the literature, Prev Vet Med 2021;190:105325.
[4] B. S. Kheirabadi et al., Evaluation of topical hemostatic agents for combat wound treatment, US Army Med Dep J 2011:25-37.

SEAL – STOPS BLOOD LOSS FAST

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HEMOSTATIC WOUND SPRAY

Detailed Instructions:

- Remove the can from the box
- Shake the can until you hear clicking
- Remove cap
- Access and expose wound
- Hold can 6-10 inches from the wound
- Depress the nozzle
- Adjust the distance of the can from the wound to best cover the wound
- Apply a sterile dressing and apply pressure to the wound for at least 3mins, followed by bandage if feasible
- Call emergency services or seek medical attention – For EMS providers: Transport as appropriate.

Indications for use:
SEAL PRO [2.5oz] is intended to be used to achieve hemostasis in emergency situations for the temporary control of severe topical bleeding. This product can be used by trained individuals for mild injuries to severe bleeding. -- Please note, the over-the-counter version this product, detailed below, can be used by laypeople to treat mild to moderate bleeding. -- Severe bleeding can rapidly soak through bandages and be difficult or impossible to stop with pressure alone. If not promptly treated, it can lead to life-threatening blood loss. It often occurs following traumatic amputations, large or deep lacerations, penetrating wounds such as a stabbing or gunshot, avulsions, degloving injuries, and other forms of trauma.

SEAL OTC [1.5oz] is indicated for the local management of minor bleeding. With mild to moderate bleeding, the bleeding may slow or stop with pressure but resume once the pressure is released. The blood from a moderately bleeding wound may soak through bandages, though it remains controlled and not excessive. Wounds in this category would include moderate cuts, lacerations, and abrasions involving a large area of skin (sometimes referred to as “road rash”).

Manufacturer established contraindications:
Not for use injuries involving the eyes, and do not get the product in the eyes. Protect the eyes when applying to head and neck wounds.
It is not recommended to use SEAL on "sucking" chest wounds or open skull fracture.

EMS Jurisdictions that approved the use of SEAL often include language either authorizing any chitosan-based topical hemostatics or including wording authorizing use of a spray topical hemostatics.

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Best practices for medical providers and hemorrhage control training:
Based on feedback from military and EMS providers, please consider the following when implementing SEAL in a department or developing a training program.

SEAL Trainers are sold separately at SEALwoundcare.com. When used with TrueClot Blood Simulant, the trainers produce similar effects to SEAL Hemostatic Spray's interaction with real blood.

SEAL PRO can provide 2.5oz of highly effective hemostatic to a severely bleeding wound within 5 seconds. Typically, bleeding stops or is dramatically reduced within a few seconds. Promptly applying a pressure dressing to the sprayed area for at least 3 minutes will enhance hemorrhage control. SEAL provides an additional option to existing hemorrhage control interventions such as wound packing and if need be, application of a tourniquet. If a tourniquet is applied, SEAL may enable it to be eased or removed more quickly at the receiving hospital. SEAL will not interfere with other interventions and may, in fact, increase their effectiveness.

Based on feedback from providers that have used SEAL, several actions can increase the effectiveness of SEAL:

- To complement SEAL, bandages that create pressure on the wounds, such as "Israel Bandages" or First Aid self-adhesive bandages, are highly recommended.
- SEAL increases the effectiveness of wound packing. It can also be used with any brand of hemostatic gauze.
- When applying SEAL to puncture wounds or lacerations, slight traction to open the wound will help the product penetrate deeper into heavily bleeding wounds.
- For wounds over larger areas, such as avulsions deep abrasions or massive degloving injuries, SEAL can be sprayed in a sweeping motion to cover the entire wound. Use multiple cans if necessary.
- Follow the prescribed distance of 6-10 inches for application to reduce blood spraying onto providers.

Guidance for Hospital ER, Emergency Medicine, and Trauma Center Providers.

Follow the above recommendations related to the application if needed to achieve hemorrhage control.

For removal:

SEAL
HEMOSTATIC WOUND SPRAY

- Expose the wound and gently remove bandages.
- Rinse the wound with sterile saline or water. This will remove most of the product that is not directly bonded to blood. If any product remains, light debridement can be done with gauze or other sterile dressing to clean the wound.
- There are no other required actions for removal. Treat the wound following established medical practices.

For more information or questions about SEAL, please email Info@bc3tech.com