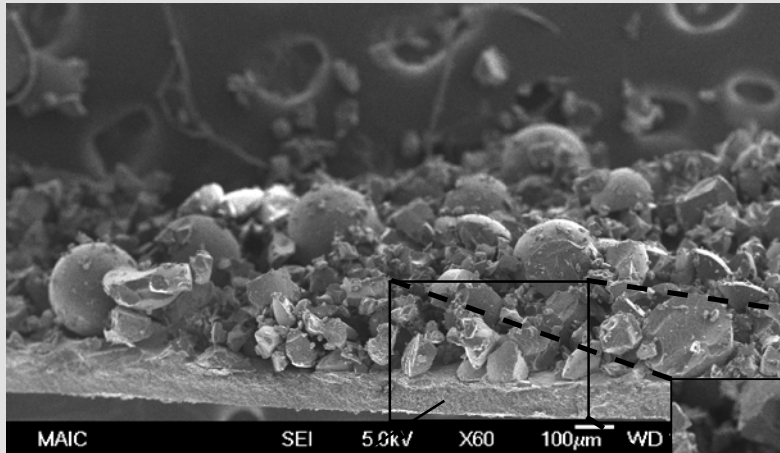


BIOSEAL ADVANCED powder is a mixture of a hydrophilic polymer and a potassium iron oxyacid salt. BIOSEAL works in combination with blood or exudate to create a physical barrier over the wound site such that nothing goes in and nothing comes out.

- On the proximal side of the seal, pH is neutral in in-vitro testing
- On the distal side of the seal, pH is low creating a hostile environment against colonizing microbes

BIOSEAL ADVANCED creates a seal which stops the flow of blood, absorbs exudate, stops oozing and protects the wound by the 2-step simultaneous mechanism below:

- The polymer rapidly dehydrates the liquid portion of the blood, stacking up the solid blood components beneath.
- The salt component agglomerates the solid blood components (sticks them together).



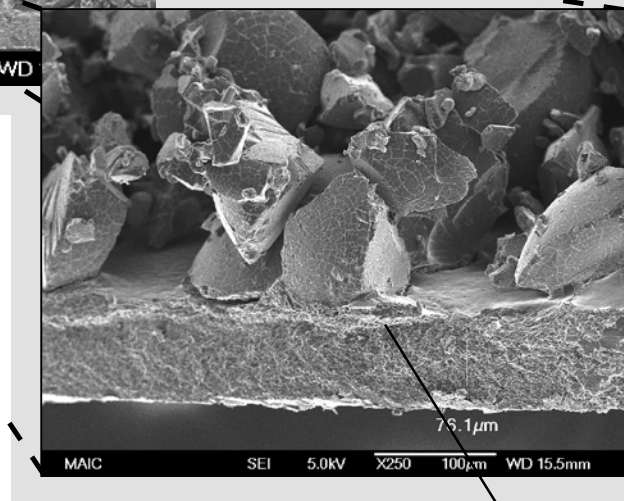
These scanning electron microscope (SEM) photos were taken of a BioSeal seal created using Na-EDTA treated whole bovine blood.

The Seal
(the wound is below the seal)

Nothing In / Nothing Out

The SEM photo to the right demonstrates the integrity of the seal.

- "Nutrients" cannot ooze out
- Bacteria cannot colonize in



The Seal

The Seal Travels Home

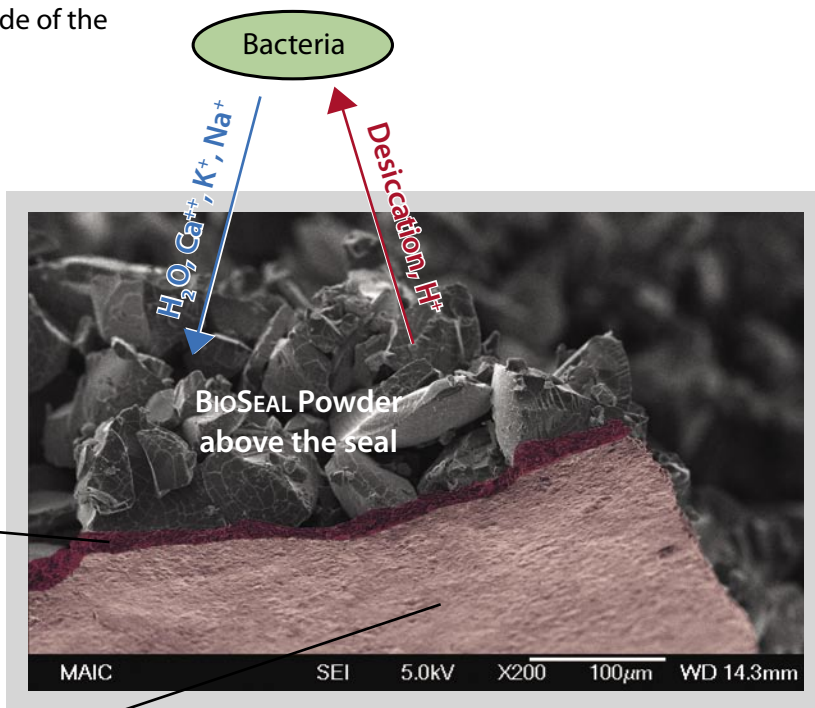


The protective seal remains in place until it falls off naturally, unlike products removed prior to ambulation.

Sustained Hostile Environment

Above the seal

1. Bacteria full of water and salts come in contact with the BioSeal powder on the top side of the seal. (H_2O & Ca^{++} , Na^+ , K^+)
2. The bacteria dries. (desiccation)
3. The salts in the moisture pulled from the bacteria are exchanged for H^+ (acidic), creating a low pH environment above the seal.



The Seal

- Composed of coagulated blood components
- Below the seal the pH is ~ neutral
- Above the seal the pH is ~ 2

Below the Seal

The BioSeal Powder floats on the blood, therefore it doesn't penetrate the seal. This results in a neutral pH below the seal. (The pH below the seal was measured @ 7.4 in a saline extraction of a laboratory-created seal.)