INSTRUCTION MANUAL

ChoiceTherapeutics®

TheraBond® 3D

Antimicrobial Dressings for Burns and Traumatic Wounds

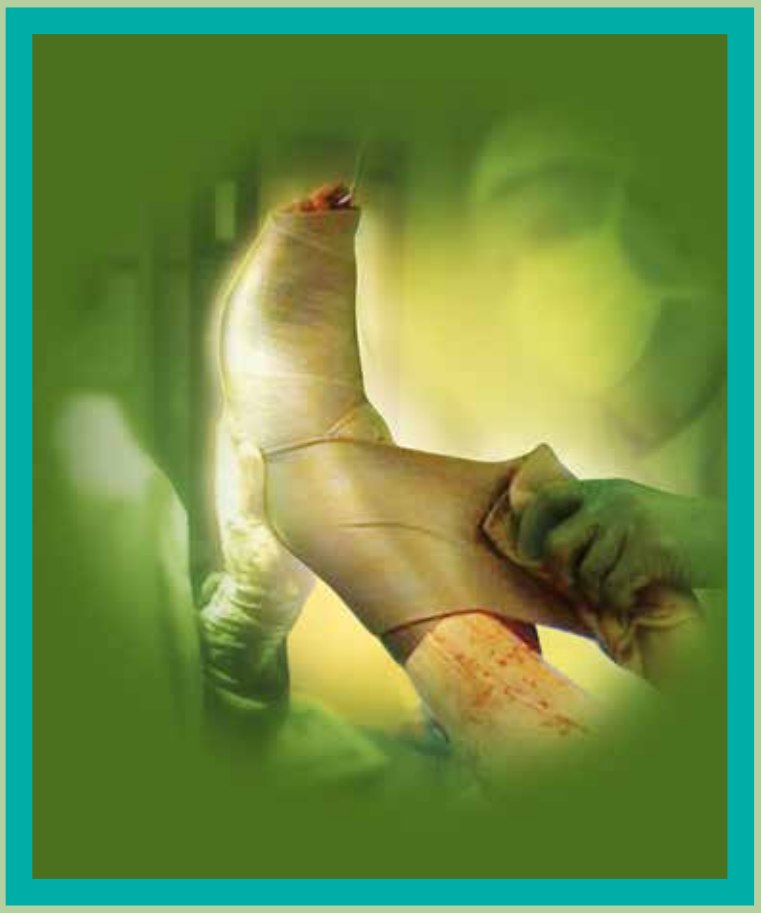
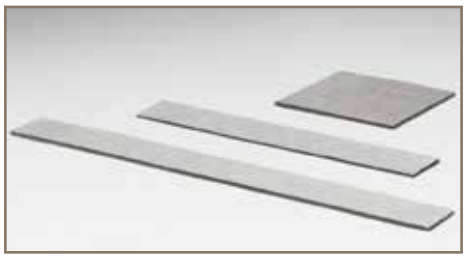


Table of Contents

TheraBond 3D® Dressings from Choice Therapeutics

TheraBond 3D is an advanced antimicrobial dressing from Choice Therapeutics that drives excellent clinical outcomes. This next-generation product line of dressings has proven itself very valuable in burn management and in the treatment of traumatic wounds.

They are available in many sizes as sheets called “contact dressings” and our unique wrap dressings.



Contact dressings

Wrap dressing

Important points about TheraBond 3D

- Two exclusive technologies - a unique silver fabric bonding process that fuses silver to over 99% of fabric’s surface combined with a three-dimensional “smart” fabric design
- Bonding process enables the release of antimicrobial silver ions that begin killing bacteria within 15 minutes
- Silver ions kill bacteria on a controlled, sustained basis for 14 days
- TheraBond 3D’s unique three dimensional fabric technology, with its unique struts, actively removes fluids and exudate from the wound into an inexpensive absorbent outer gauze dressing
- Removal of fluid and exudate promotes healing
- Only the absorbent, secondary dressing is changed, there are fewer dressing changes, minimizing patient pain, wound disruption, and nurse or doctor time
- Most comfortable and conformable dressings on the market

To get the full benefit from TheraBond 3D, it is important that you understand proper application, daily dressing management, and proper dressing removal for the important applications. This is why we have prepared this instruction manual.

Using TheraBond 3D Contact Dressings

Choice Therapeutics offers a full line of contact dressings for burns and traumatic wounds.

APPLICATIONS & USE

Burn Management

- Partial thickness burns
- Excised full thickness burns
- Grafted areas
- Donor sites

Traumatic Wounds

- Open Wounds
- Penetrating Wounds
- Traumatic Amputations
- Open fractures

Using TheraBond 3D for a patient with burns and multiple trauma secondary to a refinery explosion

AVAILABLE CONTACT DRESSINGS

TheraBond® 3D Antimicrobial Contact Dressings		
Catalog No.	**Size (cm)**	**Units/Box**
3DAC-13	3.5 x 7.5	10
3DAC-16	3.5 x 15	5
3DAC-110	3.5 x 25	5
3DAC-44	10.5 x 10.5	10
3DAC-48	10 x 20	5
3DAC-816	20 x 40.5	2
3DAC-1616	40.5 x 40.5	2
3DAC-2424	61 x 61	2

Applying Contact Dressings

- **Thoroughly cleanse wound**
  - Remove dead tissue

- **Moisten TheraBond 3D**
  - The easiest way to moisten TheraBond 3D is to saturate it in a sterile basin with sterile water

  - After the dressing has been saturated, wring it out so it is just damp, not wet, then apply

- **Apply textured side down**
  - Waffle to the wound
  - Texture to the tissue

- **Cover with absorptive secondary dressing**

  - Usually gauze is used. However, foams and super-absorbent dressings can be used
  - Applying an absorptive secondary dressing is a required step. Remember TheraBond 3D does not absorb but transfers fluids and exudates

- **Secure the dressing**
  - On the trunk, tape and adhesive films are used
  - On limbs, wrap bandages and net are usually used

Daily Contact Dressing Management

The TheraBond 3D Dressing will perform best if it remains moist. Keeping the TheraBond 3D dressing moist optimizes the dressing's function in two ways. First, moisture is required for ionic silver release. Second, if allowed to dry out, exudates can adhere to the dressing, resulting in difficult and painful dressing removal. Keeping the dressing moist greatly reduces the likelihood of sticking.

- **Check the TheraBond 3D Dressing for moisture content every 8-12 hours by feeling the edge of the TheraBond 3D Dressing**
- **Remove the outer dressing**
- **Apply sterile water directly to the TheraBond 3D dressing**
  - Apply sterile water using a mister or by simply pouring it directly onto the TheraBond 3D Dressing
  - Apply sterile water more frequently if the dressing becomes dry

- **After wetting, reapply the outer dressing**

Contact Dressing Removal

- **Remove all dressing materials covering the TheraBond 3D Dressing**
- **Thoroughly soak the TheraBond 3D dressing before removing**
- **Lift one corner of the TheraBond 3D dressing and slowly remove in a motion parallel to the skin**
- **If the TheraBond 3D dressing is dry when the outer dressings are removed, do not attempt to remove it.** First, thoroughly saturate the TheraBond 3D and let the dressing soak for 10 to 15 minutes. After soaking, lift one corner of the dressing and slowly remove in a motion parallel to the skin

Note: if difficult to remove, soak, soak, soak.

Using TheraBond 3D Wrap Dressings

Choice Therapeutics wrap dressings provide unparalleled comfort, conformability and antimicrobial protection for injured extremities while offering fluid transfer capabilities that create an ideal healing environment.

APPLICATIONS & USE

Burn Management

- Partial thickness burns
- Excised full thickness burns
- Grafted areas
- Donor sites

Traumatic Wounds

- Open Wounds
- Penetrating Wounds
- Traumatic Amputations
- Open fractures

Applying TheraBond 3D wrap to patient with burn and allograft

AVAILABLE WRAP DRESSINGS

TheraBond® 3D Antimicrobial Contact Dressings		
Catalog No.	**Size (cm)**	**Units/Box**
3DAW-472	10 x 183	2
3DAW-696	15 x 244	2
3DAW-248	5 x 122	2

Applying Wrap Dressings

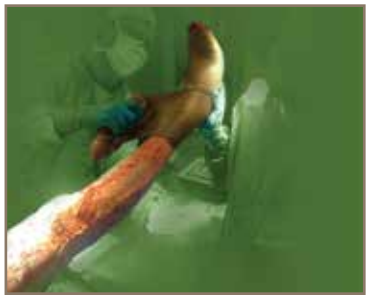
- **Thoroughly cleanse wound**
  - Remove dead tissue

- **Moisten TheraBond 3D**
  - The easiest way to moisten TheraBond 3D is to saturate it in a sterile basin with sterile water
  - The wraps take about one liter of fluid to become saturated

  - After the wrap has been saturated, wring it out so it is just damp not wet, then apply

- **Apply textured side down**
  - The wrap will unroll textured side down

- **Start at distal portion of the extremity (near hand or foot)**
  - Wrap around most distal potion of the extremity twice, slightly overlapping the layers
  - Pull wrap so it is snug, not tight
  - Wrap up the extremity at a 45-degree angle, overlapping each layer slightly



- **Secure the wrap at the top with a staple or by tucking in the flap**
- **Cover with a gauze wrap bandage**

- **Cover gauze bandage with an elastic wrap bandage or stockinette**

Daily Wrap Dressing Management

The TheraBond 3D Dressing will perform best if it remains moist. Keeping the TheraBond 3D dressing moist optimizes the dressing's function in two ways. First, moisture is required for ionic silver release. Second, if allowed to dry out, exudates can adhere to the dressing, resulting in difficult and painful dressing removal. Keeping the dressing moist greatly reduces the likelihood of sticking.

- **Check the TheraBond 3D Wrap for moisture content every 8-12 hours by feeling the edge of the TheraBond 3D Wrap**
- **Remove the outer dressing**
  - Apply sterile water directly to the TheraBond 3D Wrap. Apply sterile water using a mister or by simply pouring it directly onto the TheraBond 3D Wrap
  - Apply sterile water more frequently if the dressing becomes dry

- **After wetting, reapply the outer dressing**

Wrap Dressing Removal

- **Remove all dressing materials covering the TheraBond 3D Dressing**
- **Thoroughly soak the TheraBond 3D dressing before removing**
- **Lift one corner of the TheraBond 3D dressing and slowly remove in a motion parallel to the skin**
- **If the wrap is dry when the outer dressings are removed, do not attempt to remove it.** First, thoroughly saturate the TheraBond 3D and let the wrap soak for 10 to 15 minutes. After soaking, slowly remove in a motion parallel to the skin

Burns Management

TheraBond 3D Applications

- Burns
- Traumatic wounds
- Open fractures
- Penetrating wounds
- Amputations
- Grafts
- Donor Sites

Using TheraBond 3D for a patient with burns and multiple trauma secondary to a refinery explosion

TheraBond 3D offers a number of advantages in the management of burns and traumatic wounds. First, there is rapid onset on antimicrobial action. TheraBond 3D has been shown to provide a 4 log reduction of pathogens within 15 minutes of application, and this level of antimicrobial efficacy is maintained for a period of 14 days. The fabric design has an inner core that is over 89% air. This provides insulation against heat loss, an important attribute, especially in patients with burns that involve large surface areas.

TheraBond 3D Benefits

- 4 log reduction of pathogens within 15 minutes of application
- antimicrobial efficacy is maintained for 14 days
- provides insulation against heat loss
- conforms to body contours
- provides mild compression

Using TheraBond 3D with Excised Full Thickness Burns

Figure 1: Large surface area>TheraBond 3D affixed with skin staples

Figure 2: TheraBond 3D covered with absorbent dressing

TheraBond 3D dressings should only be applied to full thickness burns after they have been excised. TheraBond 3D® offers an excellent solution for patients with an excised full thickness burn. First, its antimicrobial action defends against infection. Second, the 3D fabric actively transports fluid away from the burn into an absorptive secondary dressing. After the burn has been excised, the TheraBond 3D dressing is applied in direct contact with the burn. Before application, the dressing is thoroughly wetted and then wrung out so that it is just damp. The dressing is then applied textured side down. If necessary, skin staples can be used to secure the dressing. This can be of great benefit when large surface areas are being covered. (Figure 1) The clinician should put slight tension on the dressing before stapling to ensure that the dressing stays in contact with the burn. A secondary absorptive dressing, usually layers of gauze, is placed over the TheraBond 3D. (Figure 2) The dressing is completed with the securement method appropriate to the area being treated.

TheraBond 3D for excised full thickness burns

- Moist TheraBond 3D dressing applied texture side down in direct contact with the burn
- Skin staples can be used to secure the dressing (Figure 1)
- A secondary absorptive dressing, usually layers of gauze, is placed over TheraBond 3D. (Figure 2)
- Use dressing securement method appropriate to the area being treated.
- Secondary dressing should be changed if and when it becomes saturated
- Check dressing once per 8–12 hours to be sure that it is staying moist

Daily dressing maintenance is straightforward. The dressing should be checked once per 8–12 hours to be sure that it is staying moist. This is easily done by feeling underneath the secondary dressing. The secondary dressing should be changed if and when it becomes saturated. If the secondary dressing becomes saturated, exudate will no longer be transferred away from the burn.

The dressing should be removed gently. If any adherence to the tissue was noted, the dressing should be wet thoroughly and gently pulled away from the burn. If necessary a surfactant or petroleum-based ointment can be gently worked under the dressing to facilitate its release.

Using TheraBond 3D with Partial Thickness Burns

TheraBond 3D applied to the first of multiple partial thickness burn sites.

When using TheraBond 3D for partial thickness burns, the clinician must determine if the burn will require observation or if the dressing will remain in place until the burn is healed. Because a partial thickness burn heals by epitheliazation, the dressing will adhere to the burn during the healing process if the dressing is left in direct contact with the burn. It is important to note that this is biologic adherence, not the sticking that is associated with the drying of exudate. Therefore, daily dressing maintenance will be different for burns requiring observation from burns that will be allowed to heal without disrupting the dressing.

It is common for clinicians to observe a partial thickness burn during the first few days after injury to assess if the thermal damage is extending deeper into the tissue. If the clinician intends to observe the burn as it heals, the dressing should be kept moist and lifted off the

burn on a daily basis. In this case, a non-adherent dressing could be used as a contact layer. It is important to remember not to use petroleum-based non-adherent dressings. Rather, use dressings such as Meplitel or Conformant-2.

Once the clinician is satisfied that the partial thickness burn is likely to heal in an uncomplicated manner, the dressing can be left in place without observation of the burn itself. As the burn heals, the dressing will biologically adhere to the burn and will remain in place until it releases when healing is complete. The TheraBond 3D dressing should be kept moist but not lifted from the burn. The absorbent secondary dressing should be changed as necessary. As the wound heals, the TheraBond 3D dressing will release from the burn, and the released section can be trimmed away. Areas of the dressing that remain adhered should not be forcibly removed.

If a complication of healing should develop, the dressing will release spontaneously because the normal healing process that results in adherence will be disrupted. In this type of case, the area of the dressing that releases can be trimmed away to observe the burn.

Partial Thickness Burns requiring observation

- Keep TheraBond 3D moist
- Change the absorbent secondary dressing daily
- Lift TheraBond 3D off the burn daily
- Apply a new absorbent dressing
- Alternately a non-petroleum based, non-adherent dressing could be used as a contact layer

Partial Thickness Burns with dressing allowed adhere

- Keep TheraBond 3D moist
- The absorbent secondary dressing should be changed as necessary
- As burn heals released section of dressing can be trimmed away
- Areas of the dressing that remain adhered should not be forcibly removed

Using TheraBond 3D for Graft Management

Figure 1: TheraBond 3D on autograft

Figure 2: TheraBond 3D on xenograft (pigskin)

Deep partial-thickness and full-thickness burns require grafting for healing. Before a graft is placed on the burn, the eschar must be excised.

Eschar is structurally intact but dead dermis. If left in place, the eschar would separate from the underlying viable tissue, leaving an open, unhealed bed of granulation tissue. This open burn wound would be at high risk of becoming infected and because it would heal by contracture; severe scarring would result. Surgically removing the eschar and covering the burn with a graft protects the burn from infection and reduces scarring.

The burn is excised to the level of viable underlying tissue. The goal is to remove all dead and nonviable tissue and to prepare the wound for grafting. Excision creates the wound surface that is fully vascularized and ready for application of permanent or temporary skin replacement.

If possible, burn excision may be done in a single surgical session. However, because the excision slices through viable tissue blood loss is significant. Therefore, when there is a large

Using TheraBond 3D for autografts

- Excise eschar
- Apply harvested autograft
- Apply Non petrolatum based, non-adherent contact dressing directly to the graft
- Apply TheraBond 3D over the non-adherent dressing. Do not apply TheraBond 3D directly to the skin graft

burn surface area or the patient's medical condition would not allow an extensive surgical procedure, the excision is done in multiple surgical sessions. Proper excision of the burn is critical to graft adherence and vascularization. Graft adherence and vascularization is often referred to as graft take. Therefore, to achieve graft take, the wound bed must be completely free of residual necrotic tissue such as burn eschar. Further, bacterial contamination and hematoma formation must be minimized.

The gold standard for permanent coverage of the burn is the use of the patient's own skin as the graft material. This is referred to as an autograft (Figure 1). Healthy skin is harvested from an appropriate site on the patient's body. The area from which the skin is harvested is called the donor site.

After the graft has been placed on the wound, a dressing is applied to the graft site. The dressing includes a non-adherent contact layer that is covered by an antimicrobial dressing which is in turn covered by an absorptive dressing. The dressing is checked daily but usually left in place for five days. During the five days following placement of the skin graft, the cells of the transplanted skin survive by taking up fluid and nutrients and absorbing oxygen from the excised wound bed. By day five, the graft should be adhered to the wound bed. At this point the dressing is removed so the surgeon can check the status of the graft. After checking the graft site, a new dressing is usually reapplied.

TheraBond 3D's combination of antimicrobial activity and exudate control make it an ideal antimicrobial dressing for the management of graft sites. When TheraBond 3D is used, it is important to remember petrolatum based non-adherent contact dressings such as Vaseline gauze should not be used. Silicone-based dressings are ideal. Examples of these dressings are Meplitel, Conformant2 and Adaptic Touch. It is important that TheraBond 3D is not applied directly to the skin graft as it could adhere, which would disrupt the graft upon removal.

Using TheraBond 3D for xenografts and allografts

- Excise eschar
- Apply graft
- Apply Non petrolatum based, non-adherent contact dressing directly to the graft
- Apply TheraBond 3D over the non-adherent dressing. Do not apply TheraBond 3D directly to the graft

When the burn size or medical comorbidities preclude the application of an autograft, a temporary graft is applied. There are a variety of products available that are used as temporary burn coverings. They can broadly be classified is biologic and synthetic products.

Biologics include xenografts and allografts. Xenografts are harvested from a different species of animal than the recipient. The most common xenograft used is pigskin (Figure 2). Allografts are harvested from the same species of animal as the recipient. In this case, human cadaver skin is used. Repeat allografting is performed when the allografted sites begin to undergo rejection. Eventually, all allografts sites will require auto grafting of the patient's skin.

Commonly used synthetic skin substitutes include Biobrane, Apligraf, Dermagraft, Alloderm, Primatrix and Integra. All of these products need to be changed on a regular basis, usually

every 5 to 7 days, to prevent incorporation of the product into the wound bed and to reduce the risk of infection or rejection.

The management of all temporary skin grafts is similar. After the product has been placed on the wound, a dressing is applied. The dressing includes a non-adherent contact layer that may be covered by an antimicrobial dressing which is in turn covered by an absorptive dressing. The dressing is checked daily but usually left in place for five days. After day five, the wound is assessed daily to determine when re-grafting becomes necessary.

As with autografts, TheraBond 3D's combination of antimicrobial activity and exudate control make it an ideal antimicrobial dressing for the management of temporary graft sites. Again, when TheraBond 3D is used, it is important to remember petrolatum based the non-adherent contact dressings such as Vaseline gauze should not be used. Silicone-based dressings are ideal. Examples of these dressings are Meplitel, Conformant2 and Adaptic Touch. It is important that TheraBond 3D is not applied directly to the skin graft, as it could adhere which would disrupt the graft upon removal.

Using TheraBond 3D for Donor Sites

TheraBond 3D 11 days after application to a donor site. The right side of the dressing has fully released and has been cut away. The remaining dressing will be left in place until it releases itself

Skin grafts are harvested from the patient's own skin. An instrument called a dermatome is used to remove long strips of skin with a uniform width and thickness. This creates a partial thickness wound. Healing of the donor site occurs as keratinocytes migrate across the denuded area of skin. This migration of keratinocytes, called epithelialization, proceeds most efficiently in a sterile, moist environment at body temperature. If an eschar of blood and fibrin were allowed to form on the donor site, it would act as a mechanical and chemical barrier to this migration of cells. Some clinicians apply antimicrobial ointment and a sterile dressing to prevent the formation of eschar and protect against infection. Alternately, some physicians utilize antimicrobial dressings for this purpose.

The physician can choose between two protocols when using TheraBond 3D for donor sites.

One protocol is used if the clinician would like remove the dressing to observe the site as it

heals. In this case, a non-adherent dressing is used as a contact layer. It is important to remember not to use petroleum-based non-adherent dressings. Rather, use dressings such as Meplitel or Conformant-2.

Another protocol involves applying TheraBond 3D in directly to the donor site. The dressing is then left in place without observation of the donor site. As the site heals, the dressing will biologically adhere to the tissue and will remain in place until it releases when healing is complete. The TheraBond 3D dressing should be kept moist but not lifted from the site. The absorbent secondary dressing should be changed as necessary. As the wound heals, the TheraBond 3D dressing will release from the donor site, and the released section can be trimmed away. Areas of the dressing that remain adhered should not be forcibly removed (Figure 1).

Another advantage of this protocol is that once the dressing has adhered, the patient can shower. When the patient is to shower, the outer absorptive dressing is removed. It does no harm for TheraBond 3D to become wet in the shower. After showering, simply pat any excess water off the TheraBond 3D and then cover it with a clean absorptive dressing.

Protocol for periodic observation of donor site when using TheraBond 3D

- Apply a non petroleum based, non-adherent dressing is as a contact layer
- Apply TheraBond 3D over the non-adherent dressing
- Keep TheraBond 3D moist
- Observe site as desired

Protocol for direct application of TheraBond 3D to Donor Site

- Apply TheraBond 3D directly to the donor site
- The TheraBond 3D dressing should be kept moist but not lifted from the donor site
- The absorbent secondary dressing should be changed as necessary.
- Trim any TheraBond 3D dressing that releases from the donor site
- Areas of the dressing that remain adhered should not be forcibly removed

Using TheraBond 3D for Face Masks

Figure 1: Widespread loss of epidermis

Figure 2: Mask constructed from strips of material cut from 6" x 96" TheraBond 3D Wrap

Figure 3: TheraBond 3D Strips draped across face

Figure 4: Skin staples used to fasten fabric to itself

Figure 5: Absorbent gauze wrap applied over TheraBond 3D

Figure 6: 12 days post injury

Facial injuries that involve widespread epidermal loss are very challenging. Early in the course of therapy, the dressing must be able to handle copious amounts of exudate associated with sloughing of the skin. Then, as the epithelium regenerates, it is important that the dressing not disrupt the healing process. TheraBond 3D's ability to manage fluid and exudate combined with its excellent conformability and strength as well as its 14-day duration of antimicrobial activity make it an ideal choice for the management of facial injury

Using TheraBond 3D for Face Mask

- TheraBond 3D able to handle the large amount of exudate associated with facial burns
- TheraBond 3D conforms to contours of facial anatomy
- TheraBond 3D strength allows fastening fabric with staples
- TheraBond 3D dressing not disrupt the healing process
- 14-day duration of antimicrobial activity

Using TheraBond 3D for Hands

Figure 1a: Skin staples used to fasten TheraBond Contact dressings together to make glove

Figure 1b: TheraBond 3D Wrap for arm

Figure 1c: Absorbent dressing applied

Figure 1d: Elastic wrap used to secure dressing

The most common burns of the wrist and hand are thermal burns. Thermal burns are due to exposure to flame, hot surfaces, hot liquids (scalds), and hot gases such as steam. The next most common is chemical burns resulting from exposure to acid or alkali chemicals. Electrical burns are the lease common but can have serious effects.

Most thermal burns result in partial thickness injuries. TheraBond 3D's ability to manage fluid and exudate and its 14-day duration of antimicrobial activity make it an ideal choice for the management of these injuries. Using a combination of contact and wrap dressing allows coverage of both the hand, wrist and if necessary the arm (Figures 1a-d). Excellent conformability allows it to conform to hand and wrist anatomy. Fabric strength holds staples securely. Leaving the dressing in place does not disrupt the healing process.

Figure 2a-c Prefabricated TheraBond 3D glove. 110 days post steam burn

Also available is a pre-fabricated glove that the clinician can adjust to the individual patient. (Figures 2a-c) TheraBond 3D gloves are available in four sizes.

Using TheraBond 3D for Hands

- TheraBond 3D able to handle exudate associated with facial burns
- TheraBond 3D conforms to contours of hand anatomy
- TheraBond 3D strength allows fastening fabric with staples
- TheraBond 3D dressing not disrupt the healing process
- 14-day duration of antimicrobial activity
- Available in a prefabricated design

THERABOND 3D ADDITIONAL APPLICATIONS

In **chronic wounds**, where maceration and infection are the clinical concerns, TheraBond 3D's fluid handling characteristics have demonstrated clinical significance in both **diabetic foot ulcers** and **venous leg ulcers**.
TheraBond 3D, as a **post-operative wound dressing**, acts as a barrier to infection and is available in both island and contact dressings. For additional information, contact Choice Therapeutics.

Contact Us

Choice Therapeutics, Inc.
190 Industrial Road
Wrentham, MA 02093

Customer Service:
Telephone: (888) 243-0003

Fax: (508) 384-8424

Email: info@choicetherapeutics.com

Ideal Choice LLC
Quarter al Jadiriyah
Section 934, Street 23
House 11
Baghdad, Iraq

Telephone: 07713646971
Email: info@idealchoicetrading.com

ChoiceTherapeutics®

www.choicetherapeutics.com

ML-033 RevB