

# Numobag® Kit



**Information Provided By:** Numotech, Inc.

**Manufacturer:** Numotech, Inc.

**Model Number:** NBC952

**Part Number:** NBC952

**Description:** Numobag® is cost effective and heals large skin lesions rapidly and arrests wound advancement from several insidious forms of biological attack including dermal anthrax, small pox, necrotizing fasciitis etc. The Numobag® can treat mass casualties wounded by chemical/radiological burns or damaging biological exposures.

The Numobag® can be a frontline tool as an isolation unit, reducing cross-contamination and infection of medical personnel. The heightened oxygen content kills organisms on the skin and in the wound, avoids expensive hospital trash disposal procedures, and helps the flesh heal.

## **TERRORISM AND THE NUMOBAG® KIT**

Currently the United States, as with most nations, is unfamiliar with how to properly respond to a bio-terrorism attack, especially in terms of the logistics in diagnosing and treating large numbers of infected people. Defense specialists and federal government officials are trained in how to respond to threats from conventional weapons, but chemical and biological attacks require preparation and planning that has not been fully developed.

The health care delivery system in the United States will face serious difficulties responding to surges in the number of patients resulting from a biological terrorist attack. Health providers already faced with serious staff and technical resource shortages will find it almost impossible to effectively respond to mass casualty situations.

### **Attacks most likely to create mass casualties include:**

**Biological Weapons:** The World Health Organization (WHO) once announced the eradication of smallpox, a highly contagious and incurable disease that now represents a direct threat to the entire world. However, the agent of choice for most biological-warfare programs is anthrax, which has already been demonstrated to be easily released in a major city in the United States.

**Chemical Agents (Ces):** Intended for use in warfare, chemical agents attack the organs of the human body in such a way that it prevents those organs from functioning normally. The results are usually disabling or even fatal. Effective dispersal of chemical agents to cause mass casualties is less available to terrorists and therefore may not pose as serious of a threat as biological agents.

**Nuclear Materials:** Terrorists acquiring weapons-grade fissile material is greater than all of the other threats combined. If capable of configuring fissile material to create a nuclear blast, its effects are persistent over larger areas for longer periods. Not only will the effects of massive destruction of facilities be devastating, but the resulting contamination will have a direct and persistent effect on medical response.

A common result from any of the above attacks, biological, chemical or nuclear, is severe dermatological damage to victims (lesions and burns), with an attack from biological agents being the most likely. Mass casualties that are produced by these agents are predicted to overwhelm medical care capabilities resulting in increased death and disruption. We believe technology and equipment must be found that is very simple to apply, inexpensive, and multiplies the efforts of first responders in a way that reduces the immediate overload. Such equipment should be capable of being stockpiled through the U.S. for years without maintenance or constant surveillance. We believe the Numobag® kit offers most of the features required to help arrest the effects of a biological, chemical or radiological attack in a portable, disposable system that provides immediate isolation and promotes rapid wound healing capabilities through the application Topical Hyperbaric Oxygen Therapy (THOT®) protocols.

Wounds caused by Bio-Chem and nuclear agents cause extensive damage, resulting in major disability and long recovery times. In less severe injuries, wounds heal with scarring, disfigurement, and loss of function. The Numobag® has been successfully applied to a wide variety of skin wounds including electrical, chemical, and thermal burns; abrasions; pressure sores; and diabetic leg ulcers. The Numobag® can reduce recovery times and decrease disability due to skin wounds from Anthrax, Small Pox.

The key ingredient for the application of the Numobag® Kit is a sufficient flow of high purity, medical grade oxygen. While long term storage of oxygen supplies in high pressure containers is one option for immediate field application of the Numobag®, Numotech Inc. and the U.S. Department of Energy working through Sandia National Laboratories are pursuing a portable on-site oxygen generation system that will greatly reduce the logistics burden yet allow for immediate and more sustained application of the Numobag® protocol.

## **BACKGROUND**

Recent advances in wound treatment research and development have demonstrated that the use of the Numobag can transform serious skin lesions resulting from numerous causes such as chemical and thermal burns, punctures, decubitus or pressure ulcers, amputations, abrasions, gangrene, and even necrotizing fasciitis (Fournier's Gangrene) to sites of rapid healing. The Numobag® Kit has a substantial clinical basis with supporting literature and review, is FDA approved, and is currently commercially available for clinical application from Numotech, Inc.

The adequacy of blood supply has a profound effect on wound healing. A parameter that reflects the adequacy of blood supply to the wound tissues is transcutaneous oxygen partial pressure (TcPO<sub>2</sub>). Wounds may be divided into two types: 1) Hypoxic wounds (TcPO<sub>2</sub> 30 – 40 mm Hg) – wounds with inadequate blood supply and low tissue transcutaneous oxygen partial pressure. Such wounds are characterized by the presence of necrotic tissue or gangrenous tissue. 2. Non-hypoxic wounds (TcPO<sub>2</sub> 0 - <30 mm Hg) wounds with relatively adequate blood supply and adequate tissue transcutaneous oxygen partial pressure. These wounds are characterized by the absence of necrotic tissue. Hypoxic wounds do not heal because angiogenesis in these wounds cannot be sustained, since reperfusion/reoxygenation injury destroys endothelial cells when hypoxic tissues are re-exposed to oxygen in the air. The administration of topical hyperbaric oxygen, within a narrowly defined pressure range, quenches free radicals associated with reperfusion or reoxygenation injury processes, thus supporting the angiogenesis of capillary formation and the re-establishment of an adequate blood supply to the wound site.

## HISTORY

The Numobag® was validated with over the past 25 years of clinical research which uses pure oxygen to treat skin lesions due to a variety of causes using an enclosure known as a Numobag®. The Numobag® is a thin, transparent, disposable membrane bag that covers the legs and approximately 75% of the human torso. In this therapy method, the Numobag® is secured to the patient below the breastbone and inflated with oxygen to the optimal pressure. The oxygen source can be facility piped-in oxygen or oxygen tanks. Since the patient is placed in the Numobag™, the patient receives the oxygen topically (on the skin) and locally, as well as a portable isolation unit over the entire patient's body.

The therapy has been successfully used for a variety of skin wounds including ulcerations due to diabetes, venous stasis, post surgical infections and gangrenous lesions; pressure ulcers; amputations and infected stumps; skin grafts; burns (thermal, chemical, electrical and radiation) and frostbite.

### Benefits of the Numobag® Kit

There are a number of clinical, financial and patient-care advantages to the Numobag® Kit. These include

- **Small and Portable:** The Numobag® can be used in acute, subacute, TCU, skilled nursing facility, and home care.
- **Nursing/Staff Workload:** Since the patient can be treated in his or her own bed, there is little need to move patients and thus there is a reduced burden on nursing resources time and costs.
- **Multiple Patients Treated Simultaneously:** The Numobag® allows several patients to be treated simultaneously.
- **Cost Effective, low-unit cost, unattended storage:** The Numobag® reduces nursing time, antibiotics, debridement, dressings, and specialty beds by increasing the rate of healing and reducing the length of stay.
- **Biological Warfare:** A personal, inexpensive, and disposable isolation unit effective treatment for smallpox and dermal anthrax.
- **No Cross Contamination:** The Numobag® is designed for one time use only to prevent cross contamination.
- **Patient Safety and Convenience:** The patient does not have to undergo the risk or inconvenience of being moved to another location for treatment. The Numobag® allows isolation and therapy to be conducted in any environment.
- **Reduce Scar Tissue Formation:** By facilitating new blood vessel growth, the Numobag® therapy prevents chronic skin breakdown.
- **Clinically Effective:** Use the Numobag® increases the rate of healing in controlled, randomized clinically studies.
- **Improved Patient Psychosocial Attitude:** Use of the Numobag® improves patient morale due to more effective and faster healing of wounds

The Numobag® Kit heals both acute and non-healing wounds where there is a lack of blood vessels at the source of the wound or burn. The Numobag® Kit applies pure oxygen within a prescribed range of patented pressures to the wound site, enabling the affected wound tissue to assimilate the critically needed oxygen without the toxic effects of oxygen, the effects of free radical release, or reperfusion injury. This enables the body to repair and regrow tissues at much faster rates than when oxygen is delivered through normal healing.

**MSRP:** Contact Manufacturer

**Product Dimensions:** 84"x42"

**Weight:** 1.7 lbs.

**Information Provided By:**

Numotech, Inc.

9420 Reseda Blvd. Suite 504

Northridge, California 91324

1-877-686-6832

**Email:** [numotech@earthlink.net](mailto:numotech@earthlink.net)

**Website:** [www.numobag.com](http://www.numobag.com)

