

A vibrant, out-of-focus background of various flowers in shades of yellow, pink, and red, with green foliage. The focus is soft, creating a natural and fresh atmosphere.

Exuderm® OdorShield™ wound dressing...  
the first odor-control hydropolymer



## **Say goodbye to smelly hydrocolloids.**

As useful as they are, traditional hydrocolloid dressings have one major drawback: their distinctive odor upon removal. Now there's an alternative. Medline's Exuderm OdorShield dressing, a patented new hydropolymer, absorbs odors as it absorbs wound exudate, making dressing changes more pleasant for caregivers and patients alike.

### **The benefits of an advanced hydrocolloid, plus odor control.**

The new Exuderm OdorShield dressing absorbs exudate from lightly to moderately draining wounds and provides a protective, occlusive barrier that facilitates autolytic debridement, granulation, and epithelialization. Its smooth satin backing, tapered edge, and low-residue formula help ensure longer wear. But unlike any hydrocolloid on the market, Exuderm OdorShield controls odors, too.

### **Exuderm OdorShield makes charcoal-based dressings obsolete.**

It's a fact that charcoal dressings don't work well on exudative wounds (their odor-absorbing properties are deactivated by the proteins in wound fluid). Exuderm OdorShield is designed to absorb odors in the presence of wound exudate; plus, it's more conformable, absorbs more fluid, and requires no secondary dressing.



## How Exuderm OdorShield dressings control odors:

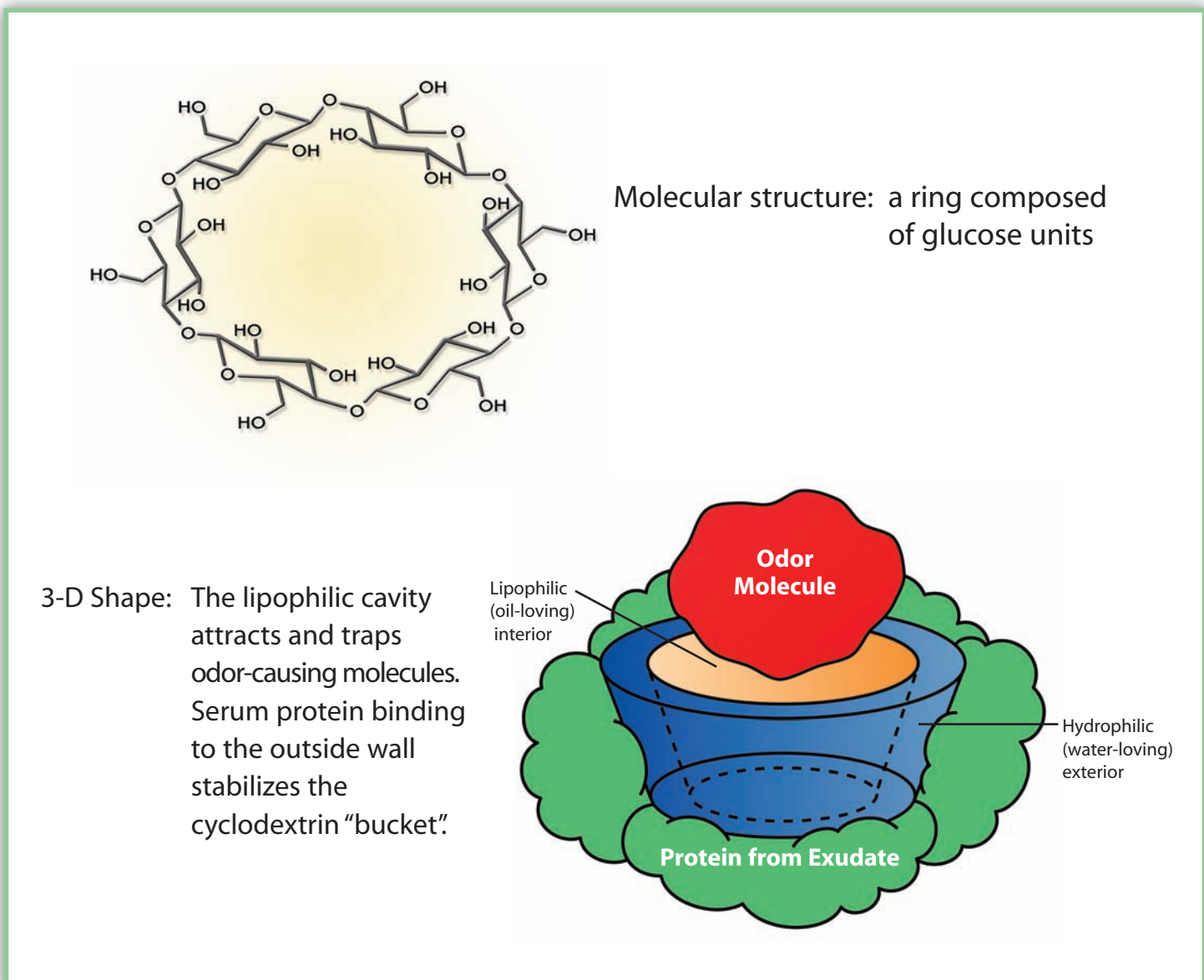
### What are cyclodextrins?

Exuderm OdorShield gets its odor-absorbing properties from cyclodextrins, which are naturally occurring, noncytotoxic molecules (bucket-shaped oligosaccharides derived from starch). Their unique molecular structure helps them capture odor-causing molecules (see Figure 1). The use of cyclodextrins is well established in the pharmaceutical industry to disguise unpleasant tastes and odors in medications. Cyclodextrins have also been used in consumer applications, for example, Febreze® products, to control odor.

### How do cyclodextrins capture odor molecules?

The lipophilic (“oil-loving”) interior of the bucket-shaped molecule attracts and traps other lipophilic substances, such as most odor-causing molecules. The exterior of the cyclodextrin molecule is hydrophilic (“water-loving”). At least a small amount of water is necessary for the cyclodextrin molecule to interact with odor molecules. This water is supplied by the hydrocolloid as it absorbs wound exudate or body fluid.

Figure 1. Structure of cyclodextrins



# Testing the odor-absorbing capability of Exuderm OdorShield:

## Electronic nose (E-nose) technology

This existing technology was further developed to test the odor-absorbing properties of the new Exuderm OdorShield dressing. The dressing material was placed in a special container (see Figure 2) along with a solution of simulated wound fluid and test odor (butyric acid, valeric acid, cadaverine, or putrescine).

Figure 2. E-nose testing container

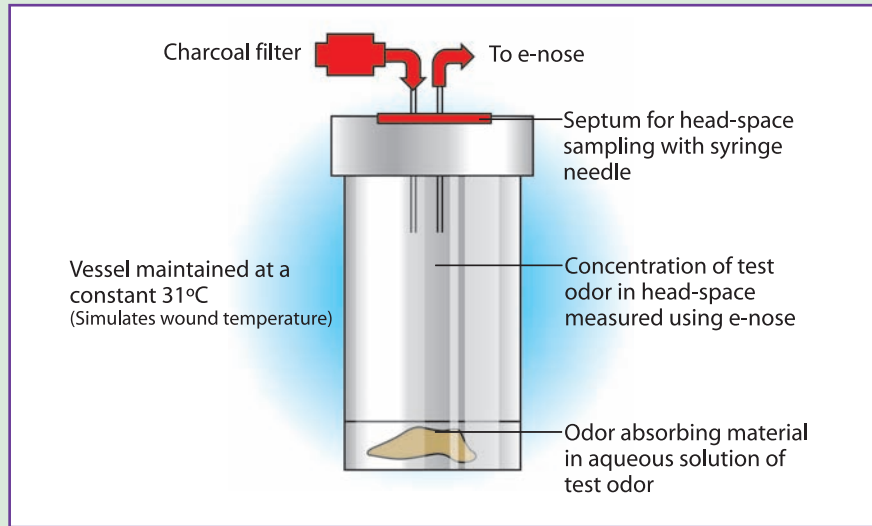


Table 1. Odor absorption measurements from E-nose tests. Higher numbers indicate better odor absorption.

<b>ExuDerm® OdorShield™ removes odor as effectively as charcoal.</b>	% of Odor Absorbed in 24 hours	Exuderm® OdorShield™	ACTISORB® Silver	CarboFlex®
	Valeric acid	93	91	88
	Butyric acid	94	77	85
	Cadaverine	77	73	78
	Putrescine	90	88	89

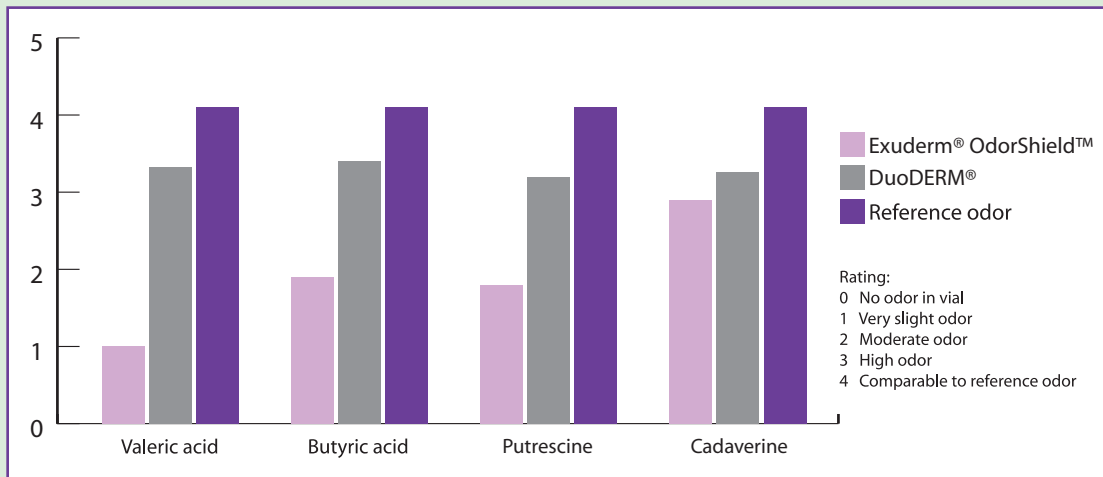
Table 2. Odor absorption measurements from E-nose tests. Higher numbers indicate better odor absorption.

<b>ExuDerm® OdorShield™ removes odor better than other hydrocolloids.</b>	% of Odor Absorbed in 24 hours	Exuderm® OdorShield™	DuoDERM®
	Valeric acid	93	74
	Butyric acid	94	63
	Cadaverine	77	69
	Putrescine	90	72

## The human nose confirms that Exuderm OdorShield is better at controlling odor.

To further test the odor-absorbing properties of Exuderm OdorShield, a blind psychosensory test versus DuoDerm® was performed. Panelists were asked to rate the level of odor remaining in a vial, which contained a sample dressing plus a test odor, after 24 hours. Once again, Exuderm OdorShield was more effective at absorbing odor (see Figure 3).

Figure 3. Results of psychosensory test. Lower numbers indicate better odor absorption.



## Cyclodextrins vs. Charcoal

The odor-absorbing capacity of charcoal dressings is deactivated by serum proteins. In contrast, cyclodextrins' odor-absorbing function is enhanced by the combination of water and serum proteins. In the presence of water alone, the cyclodextrin molecule achieves a somewhat flexible bucket shape. In the presence of serum proteins and the consequent binding of the hydrophilic serum proteins to the outside wall of the cyclodextrin structure, the shape of the cyclodextrin molecule is further strengthened in the preferred "bucket" conformation. Thus, the odor-absorbing interior of the bucket is rendered more stable and active in the presence of serum proteins.

In essence, charcoal's odor absorption properties are destroyed by wound fluid, while cyclodextrins' odor-absorbing potential is actually enhanced by wound fluids. This is borne out by actual odor absorption measurements; see the table below, which compares Exuderm OdorShield to charcoal-based dressings in the presence of increasing quantities of serum proteins.

Table 3. Higher numbers indicate better odor absorption. (Butyric acid)

	Exuderm® OdorShield™	ACTISORB® Silver	CarboFlex®
100% saline	82	93	98
50% serum/ 50% saline	90	86	80
100% serum	94	77	85

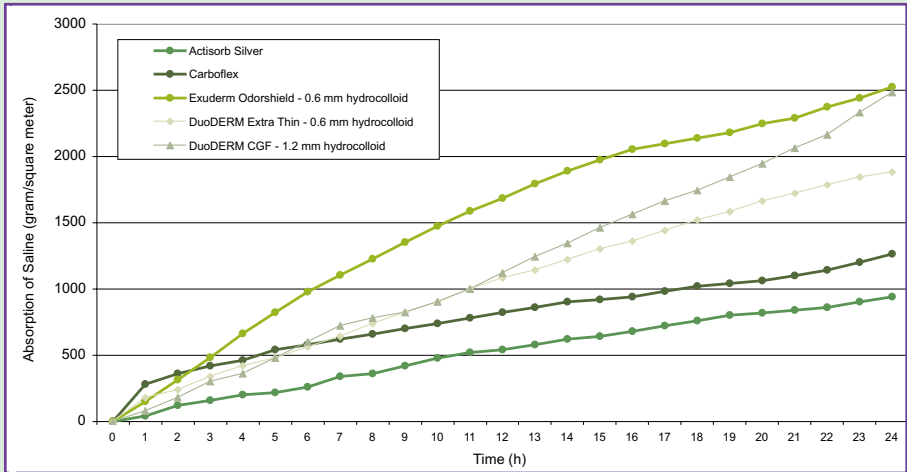
## Fluid absorption: just as important as odor control.

With all the talk about odor control, it might seem we've forgotten about the primary purpose of a hydrocolloid dressing: to protect and absorb fluid from a wound. Rest assured, Exuderm OdorShield does its job of absorbing exudate as well or better than many other hydrocolloids on the market. In laboratory tests with saline solution, it absorbed much more fluid than a charcoal dressing and about the same amount as a

competitive hydrocolloid of about double the thickness (see Figure 4).

Thinner dressings of comparable absorbency such as Exuderm OdorShield are less obtrusive and less prone to accidental detachment compared to thicker competitive products. With Exuderm OdorShield, you really do get the best of everything: high fluid absorption with a super low profile, as well as odor control.

Figure 4. Dynamic absorption of saline solution at 25°C



## Exuderm OdorShield: a dressing like no other.

### Features:

- Hydropolymer substrate absorbs exudate from lightly to moderately draining wounds.
- Added cyclodextrins absorb odors, making dressing changes more pleasant and helping restore patient dignity.
- Low-residue formula allows longer wear time and easier dressing changes.
- Tapered edge design and smooth, low-friction backing prevent rollup and extend wear time.
- Translucent appearance allows visualization of wound without removing dressing.
- No secondary dressing required.

### Indications:

- Wounds with light to moderate drainage
- Pressure ulcers (stage II–IV)
- Partial and full-thickness wounds
- Leg ulcers
- Donor sites
- Lacerations and abrasions
- First- and second-degree burns

### Ordering information:

Item #	Description	Pkg
MSC5522	2" x 2"	10/box
MSC5544	4" x 4"	10/box
MSC5570	Sacral, 3.6" x 4.0"	10/box
MSC5575	Sacral, 6.4" x 6.5"	5/box
MSC5566	6" x 6"	5/box
MSC5588	8" x 8"	5/box

### Contraindications:

Third-degree burns

### Change frequency:

May be left in place up to 7 days, depending on wound exudate.







## Building a tradition of innovation...

Medline has become a leader in wound care by developing new technologies, cost-effective choices, and broad clinical and product support. Ask your Medline representative for a copy of our Advanced Wound Care Products Catalog.



**1-800-MEDLINE | [www.medline.com](http://www.medline.com)**

©2007 Medline Industries, Inc. One Medline Place, Mundelein, IL 60060  
Exuderm and Medline are registered trademarks and OdorShield is a trademark of Medline Industries, Inc.  
Actisorb is a trademark of Johnson & Johnson Corporation.  
Carboflex and DuoDERM are registered trademarks of E.R. Squibb & Sons

MKT207158 / LIT132 / 3ZPN / 15M