LIQUID SKIN PROTECTANT

MEDLINE

Protection from friction that . . .

MARATHON

. . . lasts and lasts *and lasts*

MARATHON Liquid Skin Protectant
is designed to protect intact or damaged skin from breakdown caused by friction or moisture.

What is **MARATHON**?

MARATHON Liquid Skin Protectant is a non-stinging, cyanoacrylate-based monomer that forms a fully conformable, flexible and remarkably strong protective layer over intact or damaged skin.

MARATHON bonds to the skin surface and integrates with the epidermis as the cyanoacrylate polymerizes at the molecular level while supporting the natural integrity of the skin.[1] It provides higher strength[1,6] and higher resistance to washoff than other thin film barriers.[2] MARATHON Liquid Skin Protectant is resistant to external moisture, yet it allows the skin to breathe.

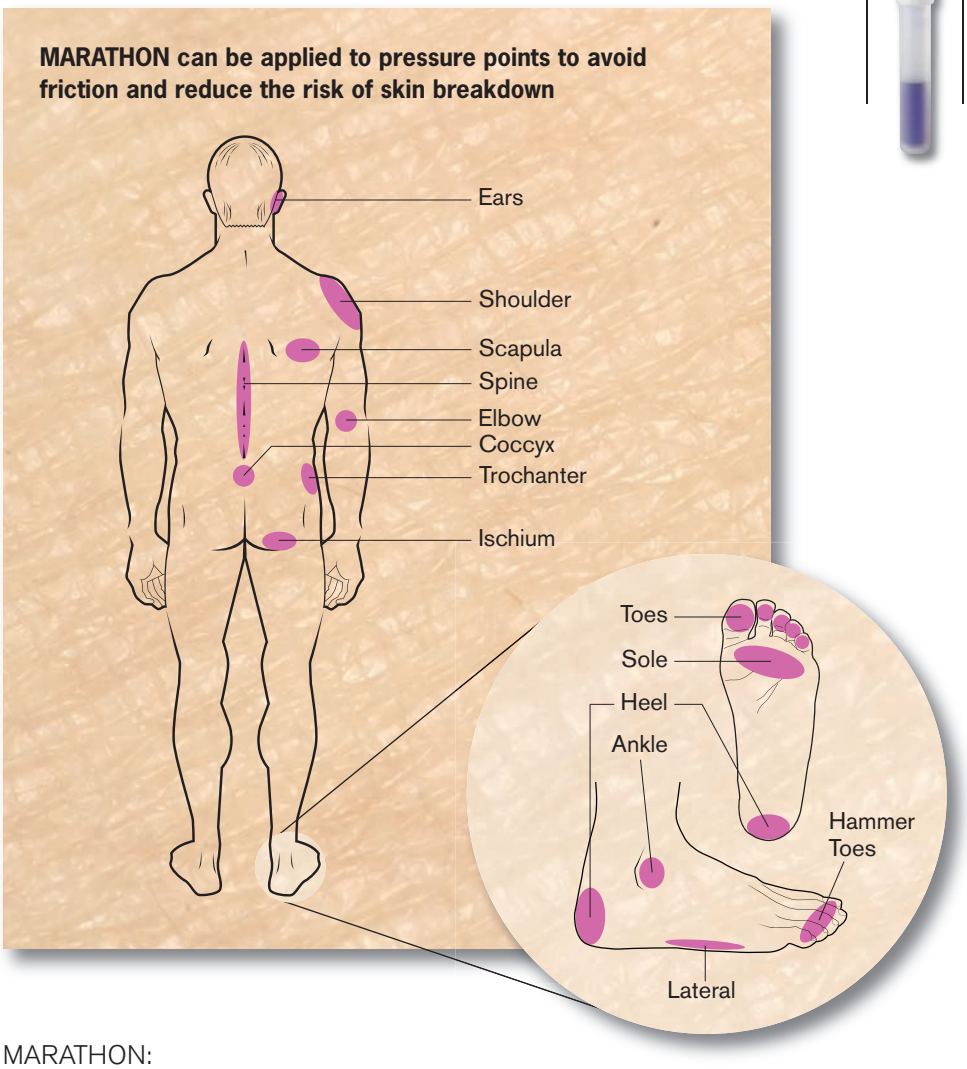
When should **MARATHON** be used?

MARATHON Liquid Skin Protectant is designed to protect intact or damaged skin from breakdown caused by friction or moisture.

Skin tear, wrist

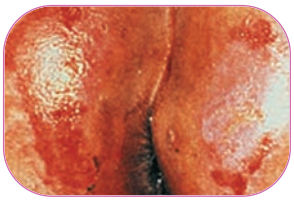
MARATHON:

- **Minimizes friction and reduces the risk of developing skin tears.**
  - Creates a strong physical barrier against abrasive forces.
  - Also recommended for damaged skin to protect against further breakdown.
  - Can be applied to pressure points to avoid the effects of friction which can reduce the risk of skin breakdown.

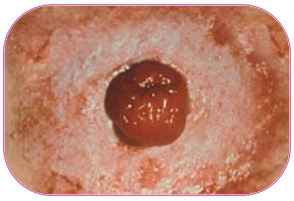


MARATHON:

- **Protects skin from prolonged exposure to moisture, which weakens and damages the skin surface and makes it more susceptible to breakdown.[3]**
  - **Incontinence:** MARATHON should be used on at-risk areas such as the sacrum, buttocks and groin area.
  - **Stomas and drain sites:** Helps protect the area around stomas and drain sites from breakdown caused by body fluids, exudate and the effect of adhesives.
- **Maintains skin surface cell integrity.**
  - Healed wounds never attain the same breaking strength (the tension at which skin breaks) as uninjured skin.[4]
  - Applying MARATHON to the skin once it has closed should help protect it and maintain integrity.



Buttocks region



Ostomy site

Closed skin

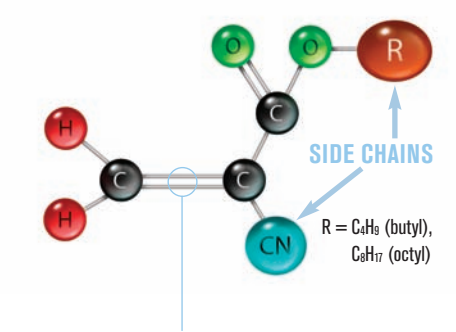
How does **MARATHON** work?

MARATHON Liquid Skin Protectant consists of individual molecules (cyanoacrylate-based monomers) that polymerize when they come into contact with moisture on the skin surface. This reaction continues until 100% of the monomer molecules have joined either to each other (cohesion) or to molecules of the substances present in skin (adhesion).

This type of bonding with skin at a molecular level ensures that the product remains in place until the epidermal cells naturally slough away, enhancing skin integrity.

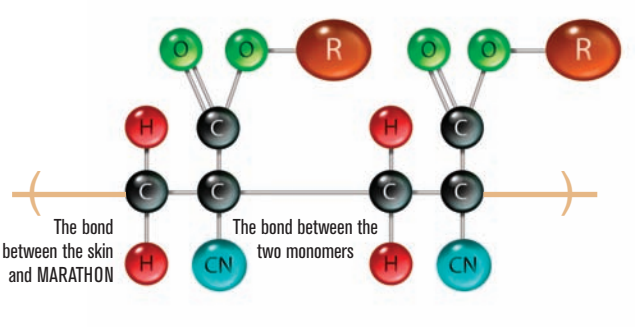
Contrary to other barrier films and skin preps, no solvents are used (there is no evaporation) and 100% of the product remains on the skin. Therefore, a little product goes a long way.

MARATHON Monomer Molecule



The double bond between the two carbon atoms breaks when the monomer polymerizes, allowing it to join another monomer molecule.[5]

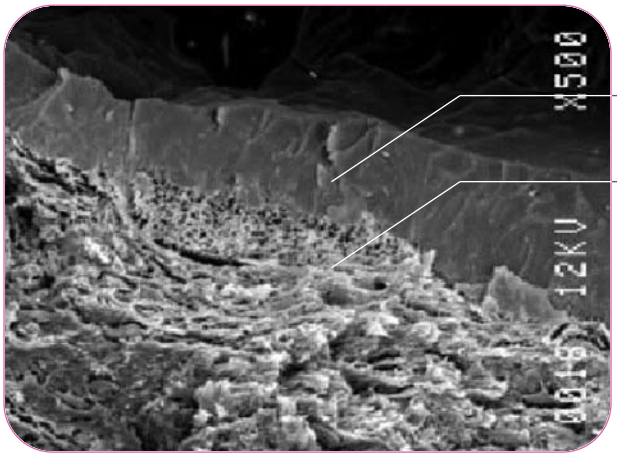
MARATHON Polymer Chain



This process is repeated a million-fold, resulting in the formation of a polymer film that protects the skin.[5]

A cyanoacrylate-based barrier's bond at the skin's surface is revealed by photographic images of such a barrier on skin, as compared to skin treated with more common solvent-based barriers.

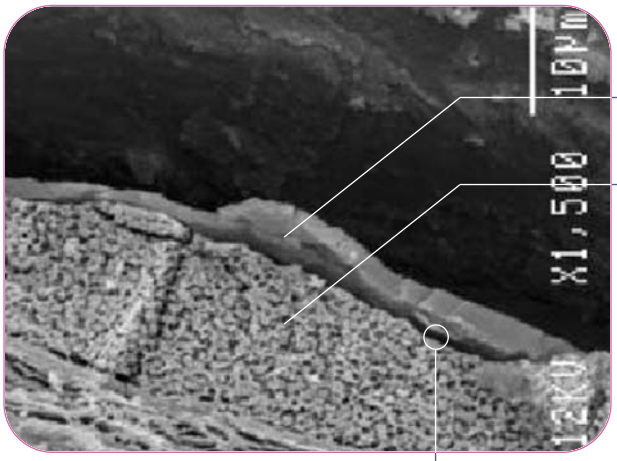
The first photograph below shows the intimate bonding of a cyanoacrylate-based barrier to skin. In contrast, in the second photo, gaps are clearly visible in the bonding of a solvent-based barrier to the underlying skin.



Cyanoacrylate-based barrier

Skin

*A >20 µm layer of cyanoacrylate-based barrier can clearly be seen at a magnification of **x500**. There are no visible gaps between the skin and the cyanoacrylate-based barrier. It has bonded directly to the skin.*



Solvent-based barrier

Skin

*The magnification on this image is **x1500** and the approximate thickness of the layer of a solvent-based barrier is <5 µm. A gap between the solvent-based barrier and the skin is clearly visible.*

Gap

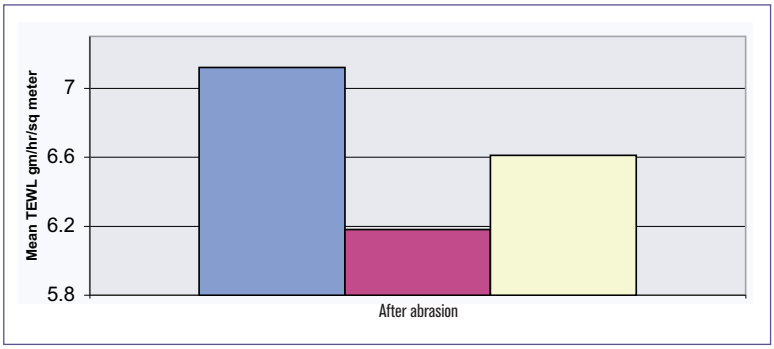
How does **MARATHON** work? *(continued)*

MARATHON forms a remarkably STRONG film that:

- better resists abrasive forces
- better resists the onslaught of corrosive liquids

Abrasion Resistance Test

Results:
Areas where MARATHON was applied showed statistically significant better protection of skin from frictional forces and from TEWL compared to Cavilon or no treatment at all.



Independent lab testing performed by CyberDERM Clinical Studies.

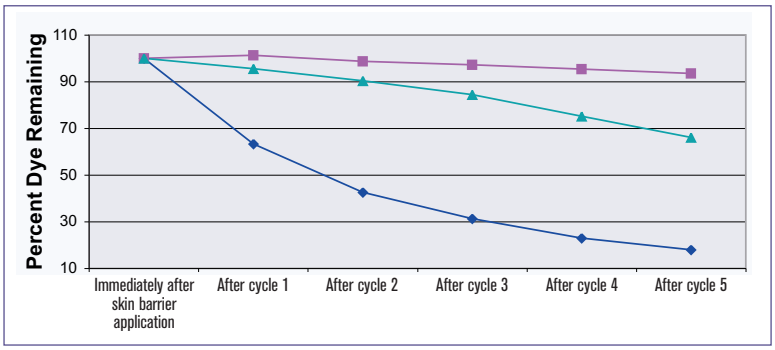
Comparison	P value
Cavilon vs MARATHON	<0.05
Cavilon vs No treatment	>0.05
MARATHON vs No treatment	<0.001

An independent test involving 12 people over age 60 compared how bare skin, skin with an application of MARATHON Liquid Skin Protectant, and skin with an application of 3M Cavilon resisted the effects of abrasion (friction).

Each subject's skin received an application of MARATHON in one area and an application of Cavilon on a second area on the forearm. A third area was left bare. Each of the three areas was then rubbed 5 to 10 times with a scrub sponge until skin damage was observed on any of the sites.

Transepidermal Water Loss (TEWL) was measured at the application sites as a gauge of skin injury. High TEWL post abrasion is a known measure of the extent of skin damage.[10]

Corrosive Fluids and Wash-off Resistance Test



Independent lab testing performed by CyberDERM Clinical Studies.

Results:
Areas where MARATHON was applied showed statistically significant better resistance after each of the five urine and washoff cycles compared to the areas where Cavilon or no product at all were applied. Therefore, MARATHON shows greater protective capabilities than Cavilon against corrosive fluids (synthetic urine) and washoff.

Comparison	P value
Cavilon vs MARATHON	>0.05
Cavilon vs No treatment	<0.001
MARATHON vs No treatment	<0.001

An independent test involving 12 people over age 60 compared how bare skin, skin with an application of MARATHON, and skin with an application of Cavilon resisted exposure to a corrosive fluid (synthetic urine).

First, crystal violet dye was applied to each subject's skin in three different areas. One area received an application of MARATHON, the next area received an application of Cavilon, and the third area was left with the dye only as a control site.

Gauze soaked with synthetic urine was then placed on each site for 20 minutes and then washed off. This process was repeated five times, or in five cycles. Resistance to the synthetic urine was measured after each cycle. Greater retention of dye indicated greater resistance to the synthetic urine and wash-off.

Percentage of retained dye after all five urine and wash-off cycles:

MARATHON	94%
Cavilon	66%
Skin with no treatment	18%

How should **MARATHON** be used?

MARATHON Liquid Skin Protectant is contained in a single-use sterile applicator. Each 0.5 g applicator can cover a 4" x 4" area. The product should be applied in a very thin layer, without covering the site more than once. ***Less means more.***

MARATHON can be used when the epidermis is broken or damaged. However, it should not be applied directly to deep, open, chronic or bleeding wounds.

MARATHON adheres to the skin and dries in less than a minute. MARATHON can remain on the skin for several days. It will wear off naturally as the skin regenerates.

ORDERING INFORMATION

Item Number	Description	Packaging
MSC093005	MARATHON Liquid Skin Protectant	10 ea/bx

References

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7 Pinnagoda J, Tupker RA, Anger T, Serup J. Guidelines for transepidermal water loss (TEWL) measurement. *Contact Dermatitis.* 1990;22:164-178.
8 Nangia A, Patil S, Berner B, Boman A et al. In vitro measurement of transepidermal water loss: a rapid alternative to tritiated water permeation for assessing skin barrier functions. *International Journal of Pharmaceutics.* 1998;170(1):33-40.

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