MEDI4

New

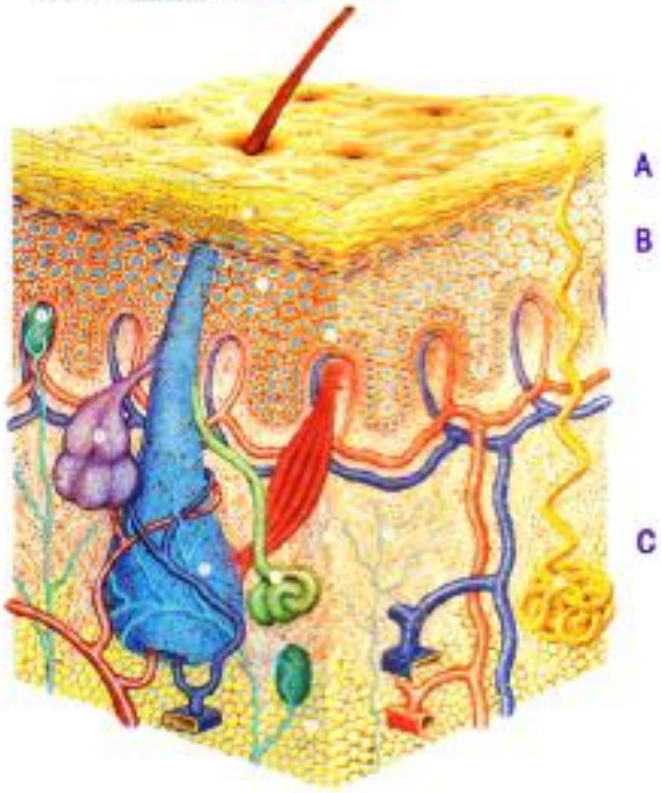
The unique-innovative Skin Protector

The original of **Marly Skin**®

The Skin...

. . . the largest organ in the human body:

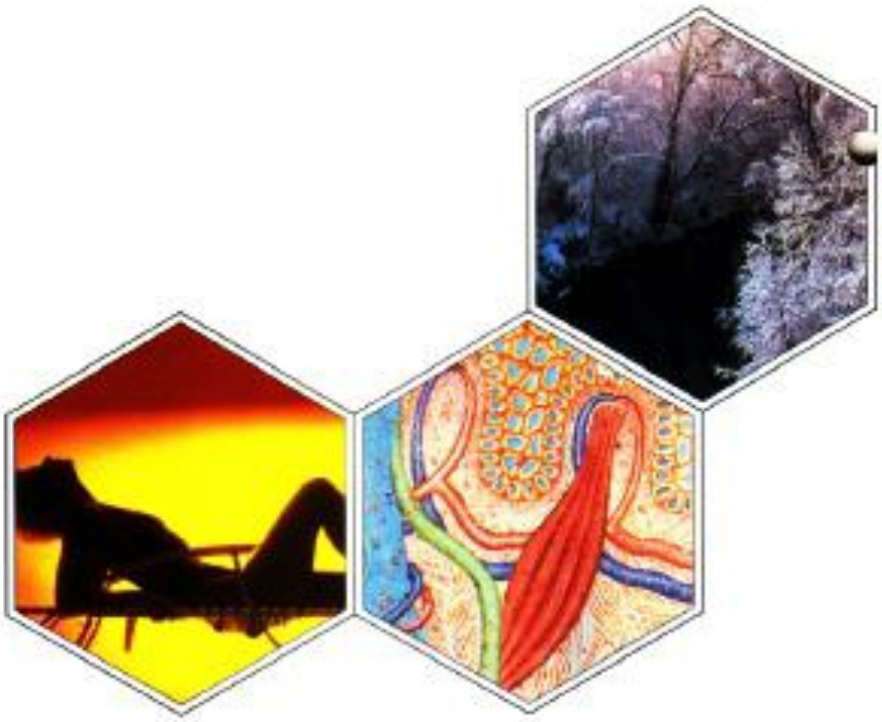
- Accounts for up to 20% of human body weight.
- Provides protection against mechanical injuries.
- Protects against chemical (noxae) and physical irritants (heat, cold, light).
- Forms a barrier to prevent penetration of bacteria, viruses, mycosis and others.
- Is responsible for heat regulation in the body.
- Is responsible for sensory perception - for example, of pain, pressure, irritation, heat and cold.
- Performs metabolic functions (carbohydrates, proteins, lipometabolism, DNA- and RNA- synthesis).



The skin has a complicated structure:

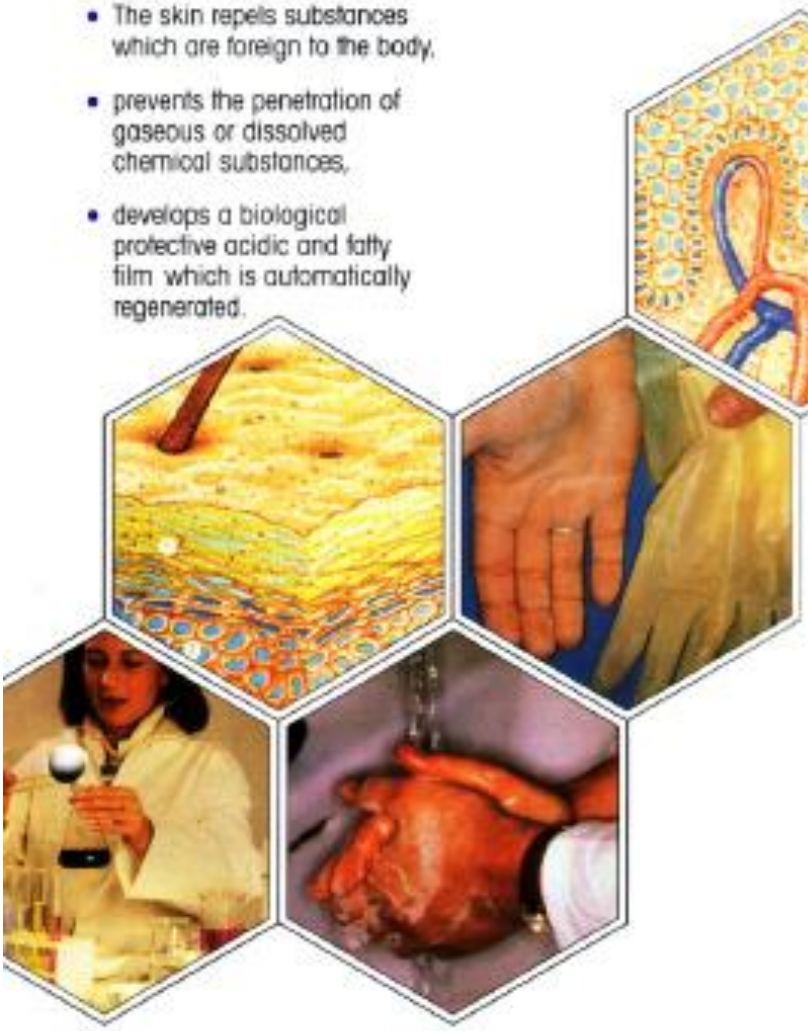
Essentially it consists of three layers:

A Outer skin or epidermis
B True skin or dermis
C Subcutaneous fatty tissue or subdermis



The skin - when healthy and functioning properly. . .

- The skin repels substances which are foreign to the body,
- prevents the penetration of gaseous or dissolved chemical substances,
- develops a biological protective acidic and fatty film which is automatically regenerated.



The skin is damaged by:

- Long exposure times to harmful substances such as:
  - Aggressive cleansing agents and detergents
  - Disinfectants
  - Oil, grease and dirt
  - Paints, varnishes and solvents
  - Metals
  - Laboratory chemicals
- Frequent washing with water and long exposure to moist environments
- Occlusion (e.g. when wearing rubber gloves)
- And many more

The formula for damage is: exposure time x harmful substance = damage potential

(Prof. Dr. C. Führer, Braunschweig)

Marly Skin Guard™ is a new system in skin protection. Apart from the innovative packaging concept, one of the obvious features is the composition. "All components can be divided into two groups with completely different characteristics."

The first group consists of water repellent (lipophilic or hydrophobic) components. Part of this group is Stearic Acid and Dimethicone. Both are capable of penetrating into the outer layer of the epidermis - the intercellular spaces of the stratum corneum.

At room and body temperature Stearic Acid is highly crystallized and, therefore, remains on the surface of the skin. The penetration of Dimethicone is reduced with increasing molecular weight. The polymer used in Marly Skin Guard™ is highly polymerized which means it does not pass through the epidermis.

The second group of components consist of hydrophilic substances which have a high degree of affinity to water (water absorbent). They are Propylene Glycol, Glycerol and Sorbitol. These ingredients are capable of penetrating the skin to a limited extent. Generally they remain in the hydrophilic area of the epidermis.

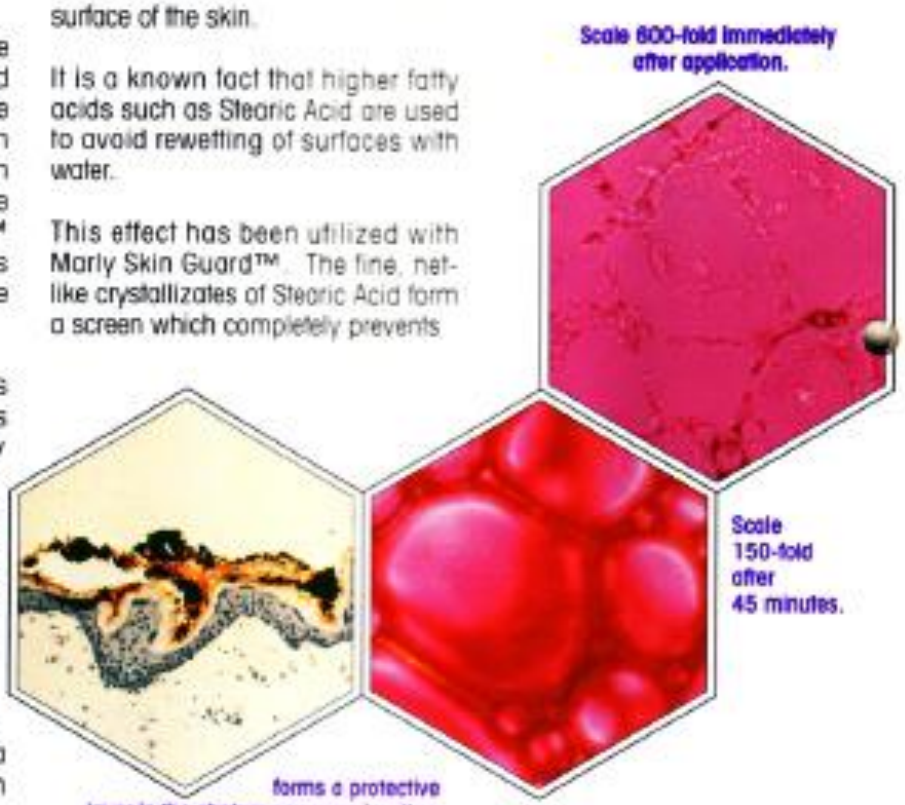
Both groups form an emulsified TWO-PHASE SYSTEM and create a TWO-DIMENSIONAL NETWORK in the shape of a thin layer in the skin. The liquid-crystalline and subsequently later crystalline areas are formed by Stearic Acid. When combined with other suitable substances, Stearic Acid readily forms a lysotropic liquid crystalline state of which the laminar state is the most frequent. Depending on the affinity of the various ingredients to the individual elements of the skin, separation occurs without penetrating into the deeper layers of the skin.

The hydrophilic substances in Marly Skin Guard™, i.e., Propylene Glycol, Glycerol and Sorbitol are bound to the keratin. Dimethicone is accepted in the lipophilic regions, so that Stearic Acid concentrates on the surface of the skin.

It is a known fact that higher fatty acids such as Stearic Acid are used to avoid rewetting of surfaces with water.

This effect has been utilized with Marly Skin Guard™. The fine, net-like crystallizates of Stearic Acid form a screen which completely prevents direct contact of water with the skin. At the same time, the skin between the web is unchanged and continues to breathe and perspire.

The foam application automatically leads to only a thin, two-dimensional network which does not impair the skin's ability to grasp and grip properly. The ingredients which penetrate the stratum corneum give the skin an unchanged feel.



Scale 600-fold immediately after application.

Scale 150-fold after 45 minutes.

forms a protective layer in the stratum corneum (section through the skin with colored Marly Skin Guard™).

Benefits...

The unique formulation, application and creation of a two dimensional protective network in the skin offers tremendous benefits:

- Long-lasting effect - minimum of 4 hours protection.
- No occlusion or pseudo-occlusion.
- Invisible.
- Hypoallergenic.
- No change of skin function - the skin breathes and perspires normally.
- Water insoluble.
- No impediment to the sense of touch.
- Reduces risk of absorption significantly.
- Easy application.
- Skin is easier to clean.
- Nongreasy.
- Very economical.
- No need to remove

Marly Skin Guard™ has been tested and proved to be a very efficient skin protector from:

- Alkaline and acid solutions.
- Detergents and emulsifiers.
- Solvents and disinfectants.
- Lubricants, fats and fatty emulsions.
- Frequent washing with water and long exposure to moist environments.
- Printing inks, stains and paints.
- Photoprocess chemicals.
- Bitumen.
- Mineral and metal containing dust, including cement.
- Resins, polyurethanes, co and other aggressive substances.
- Lab chemicals.
- Urine, blood, secretions o sputum.

Clinically and Dermatologically confirmed

Tests in European universities and hospitals by world renowned professors and doctors, as well as in well-know industrial workplaces and laboratories, have proven that Marly Skin Guard™ is the state-of-the-art skin protection.

Skin Protection...

. . . is necessary to prevent damage to the skin caused by:

- Increased exposure to chemical substances at workplaces, at home and during leisure pursuits.
- More complex work processes.
- An accumulation of damage as a result of environmental influences.

Specifications for skin protection products:

(Professor Wolfgang Raab, Vienna University)

Effective protection

Protection from alkaline substances, acids, organic solvents and contact allergens. Protection from inks, paints and lubricants.

Compatible with the skin

Non-toxic,

no contact-allergic properties,

no photodynamic properties,

no occlusion nor pseudo-occlusion.

No impediment to the sense of touch.

Stable in use

No separation into harmful substances.

Not easily removed by water.

Good adhesive ability for several hours.

Non-toxic

No negative effects even when continuously used over long periods.

Practical

No contamination of work materials.
No chemical interactions.

Skin protection - disadvantages of current methods

(Professor Wolfgang Raab, Vienna University)

Disadvantages of gloves in skin protection:

- Gloves are liable to mechanical damage and can become ineffective in a matter of seconds.
- Gloves impair the sense of touch and thus can reduce the quality of work. Certain delicate work is impossible to perform.
- The materials from which gloves are made are permeable to a large number of chemicals and provide unsuitable protection for many jobs.
- Depending on the make concerned, 20% of all gloves offered as work protection are not impermeable.
- The exclusion of air and the inclusion of moisture frequently causes skin lesions and often results in a massive deterioration of existing toxic or allergic eczemas.
- Certain glove materials function as contact allergens, a property which is further aggravated under conditions of occlusion.

Disadvantages of barrier creams in skin protection:

- Barrier creams diminish the ability of the hands to grasp properly and reduce the quality of work.
- Contact between certain work materials and greasy hands leaves stains and discoloration.
- Barrier creams must be applied frequently and at short intervals depending on the circumstances.
- Barrier creams can cause pseudo-occlusion (increased retention of moisture). The range of protection offered by such barrier creams is limited; and they can be penetrated by organic solvents and thin- bodied oils.
- Interference with the skin's physiology persists long after the protective effect has ceased.

100 ml - 3.4 oz. = 150 applications
*Sufficient for over 3 1/2 months

35 ml - 1.2 oz. = 50 applications
* Sufficient for over 1 month.

* When applying to hands twice daily

Application:

1. The skin must be clean and dry. Shake the can well before use.
2. Apply the required amount of foam to the skin by gently rubbing it over the area to be protected. When protecting hands, a walnut-size (standard) application is sufficient. Insure that the foam is also applied onto the tips of the fingers and thumbs. Allow 3 minutes for melting into the skin.
3. **The skin is now protected for 4 hours.** Even if the skin has been washed with soap and water several times during the 4 hour period, further applications are not necessary.

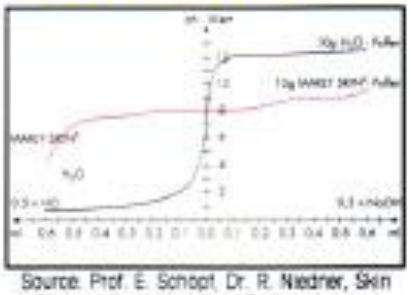
Effectiveness...

Extensive clinical tests and reports prove in scientific terms, the unique effectiveness of Marly Skin Guard™.

- Acute oral toxicity LD 50
  5.000 mg/kg
  Result negative
- Acute dermal toxicity LD 50
  2.000 mg/kg
  Result negative
- Eye irritation test
  Irritation index 0.0
- Subacute dermal toxicity
  Result negative

  Source: RCC, Ittingen (Switzerland).

- **Alkaline resistance**

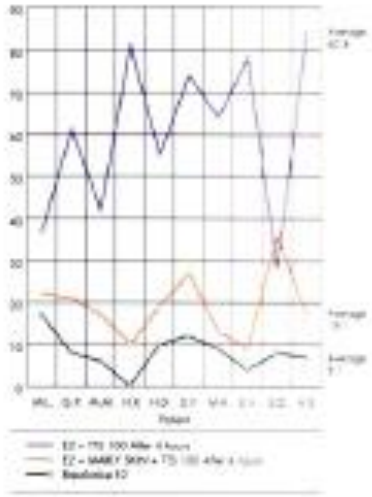


Source: Prof. E. Schopf, Dr. R. Niedner, Skin Clinic of the University of Freiburg.

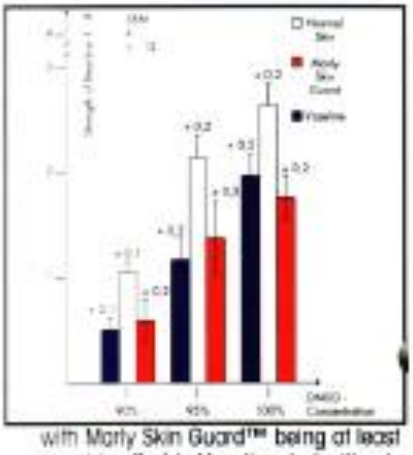
- **Detergents**
  Sodiumlaurylsulfate and Benzalkonium
- **Ni-tolerance**
- **Lactic acid test**
  Source: Dr. R. Rudolph, North Sea Clinic, Norderney.
- **Test with alcohol-based skin disinfectants**
  "Marly Skin Guard™ prevented skin irritation problems in subjects who regularly used alcohol-based hand disinfectants." Furthermore, it was found that the effectiveness of surgical hand disinfection by Sterillium in combination with Marly Skin Guard™ was improved.

Source: Professor Wille, IKI, Institute for Hospital Hygiene and Infection Control, Gießen.

- **Percutaneous penetration-inhibiting estrogen test**
  Evaluation of the penetration-inhibiting effect of Marly Skin Guard™ using the estrogen plaster ESTRADERM TTS.
  Result: *The estrogen blood level was measured in 10 patients who had previously applied Marly Skin Guard™. A statistically significant protection from penetration of TTS through the skin was observed.*
  Source: University lecturer Dr. Med. K. Chlud, Kaiser Franz Josef Hospital, Vienna.

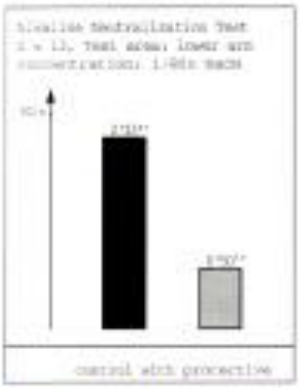


- **Long term epicutaneous test**
  n = 97 (type I-IV) sensitized.
  Result: *No sensitization.*
  Source: Professor Stresemann, Institute for Occupational and Social Medicine, Allergy Diagnosis in the Erich-Schütz Research Institute of the State Spa Salzuflen.
- **Dimethyl sulphoxide test**
  Both products tested (Marly Skin Guard™ and Vaseline) significantly reduce the strength of reaction, DMSO



with Marly Skin Guard™ being at least equal in effect to Vaseline, but without the disadvantage of Vaseline's greasy properties.
Source: Professor Plewig, Skin Clinic of the University of Düsseldorf.

- **Accelerated alkaline neutralization**
  n = 13/test site: lower arm.
  Alkaline solution: 1/80 n NoOH.
  Source: Professor Stresemann, Institute for Occupational and Social Medicine, Allergy Diagnosis in the Erich-Schütz Research Institute of the State Spa Salzuflen.



- **Test with allergic persons**
  n = 34 (type IV), times of observation after Marly Skin Guard™.
  Application: 48, 72 and 96 hours.
  Result: *No sensitization.*
  Source: Dr. R. Rudolph, North Sea Clinic, Norderney.

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- **Candida Albicans**
  Source: Prof. H.C. Friederich, Clinic of Philipps-University Marburg.
- **Neurodermitis**
  Source: Priv.-Doz. Dr. Med. R. Rudolph, North Sea Clinic Norderney.
- **Homemaker and Housewife Eczema**
  Source: Univ.-Doz. Dr. Aberer, 1. Skin Clinic of the University of Vienna.
- **Diaper Dermatitis**
  Source: Prof. Med. Often, DRK Hospital Wesermünde, 1988.
- **Incontinence**
  Source: Dr. Med. Luft, Marien-Hospital Bottrop, 1990 and Dr. Med. Kl.-D. Redecker, Doctor for Urology, Bruchsal 1989.
- **Gynecology**
  Source: Prof. Med. E.R. Weissenbacher, Gynecological Clinic Großhadern.
- **Glove and Latex Allergy**
  Source: Prof. Med. K. Wilhelm, Surgical Clinic and Polyclinic of the University of Munich, 1989. Prof. W. Raab, Specialist for Dermatology, sworn expert witness for dermatology and cosmetic medicine, Vienna 1989.
- **Decubitus**
  Source: Dr. Med. Kl.-D. Redecker, Bruchsal, 1988. Prof. Med. Fusgen, Medical Superintendant of the Clinics St. Antonius, Witten/Herdecke. Prof. Med. K. Wilhelm, Medical Superintendent of the Clinics and Polyclinic of the University of Munich.
- **Urology**
  Source: Dr. Med. Kl.-D. Redecker, Bruchsal. . . Dr. Med. Luft, Marien-Hospital Bottrop.
- **Hygienic Disinfection of Hands**
  Source: Prof. K. Baßmann, Clinic of the Christian-Albrecht University of Kiel.
- **Dental Medicine**
  Source: Prof. Schön, Bad Reichenhall.
- **Skin Protection in the Vicinity of Ulcus Cruris**
  Source: Dr. Med. Ausland, Prof. Gschnait, Hospital Lainz, Vienna.
- **Trans-epidermical Loss of Water and Toxic Substances**
  Source: Prof. Schwanitz, University of Osnabrück.
- **Surgery**
  Source: Prof. Springorum, Med. Dir. Orthopedic Clinic Caritas Hospital Bad Mergentheim, Prof. Often, Med. Dir. Surgical Clinic, DRK (Red Cross) Hospital, Wesermünde.

Use In Special Target Groups...

medical and nursing professions

The need for frequent washing and disinfection of hands, wearing rubber gloves and the risks of contact with blood, urine, saliva and other secretions as well as increased hygienic requirements - makes Marly Skin Guard™ absolutely essential for daily skin protection in these professions.

dentists and dental labs

Detergents and disinfectants, wearing rubber gloves, contact with metals, plastics, plaster of Paris, polishing dust and many other factors put extreme strain on the skin day after day! For these people, especially those working in dental labs, Marly Skin Guard™ is the ideal skin protection as it does not impair the sense of touch and feel which is essential in this profession. The skin remains dry and, above all, leaves no imprints on delicate and valuable materials.

in the lab

The "ideal" product for daily skin protection - the skin, not only the hands, is put under strain every day by frequent cleaning, disinfection and hygiene, when handling chemicals, cultures and substances as well as by the safety provisions such as protective glasses and gloves.

doctor's office and in hospitals

Every third patient in this segment is a potential Marly Skin Guard™ patient and every fifth actually needs Marly Skin Guard™. Marly Skin Guard™ is a substantial enlargement of the range of products dermatologists use in external prophylaxis, especially in case of contact allergies. Also, for the general practitioner, the mode of Marly Skin Guard™ is a real innovation and is successfully used in incontinent patients, especially in cases of skin irritations in the urogenital area. So far, Marly Skin Guard™ is unique in this segment and not comparable to any other product.

industry and workplace

In today's highly complex work environment, chemicals are a potential danger to the skin. Skin problems are a rising concern in nearly every area of industry. The lost hours due to absenteeism are on the increase. Marly Skin Guard™ offers the best in skin protection. Many European industries have proven that the use of Marly Skin Guard™ will reduce skin problems.

home and leisure time

There are many examples where Marly Skin Guard™ can help to solve problems such as eczema, dermatitis, contact allergies, etc. contact with bleaches, household cleaners, fertilizers in the garden and many other materials in the home can lead to damaged skin. Marly Skin Guard™ helps to protect the skin.

Manufactured by Marly Products, Germany