

Analysis and documentation of HANDY MILD Skin care cream

The following analysis have been completed and described:

1. **The creams influence on the skin**
A regular use of Handy Mild skin care cream improves the skins condition significant compared with a situation where only a standard soap is being used

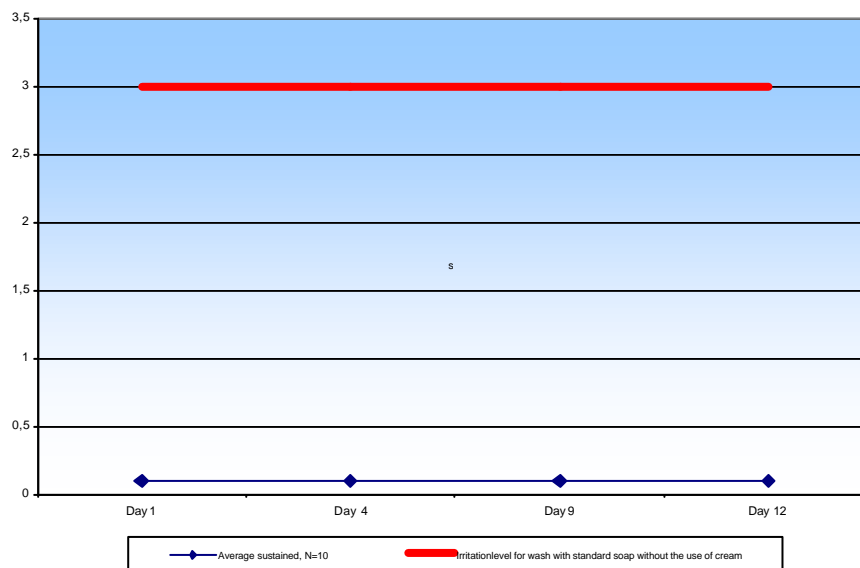
2. **Skin irritation test**
Handy Mild is just as mild to the skin as the mild reference product of the test. Therefore Handy Mild is non-irritating to the skin.

3. **Hygiene conditions**
The research proves that the use of Handy Mild as a skin care cream before work does not make it more difficult to remove the bacteria during the washing process.

1. The creams influence on the skin

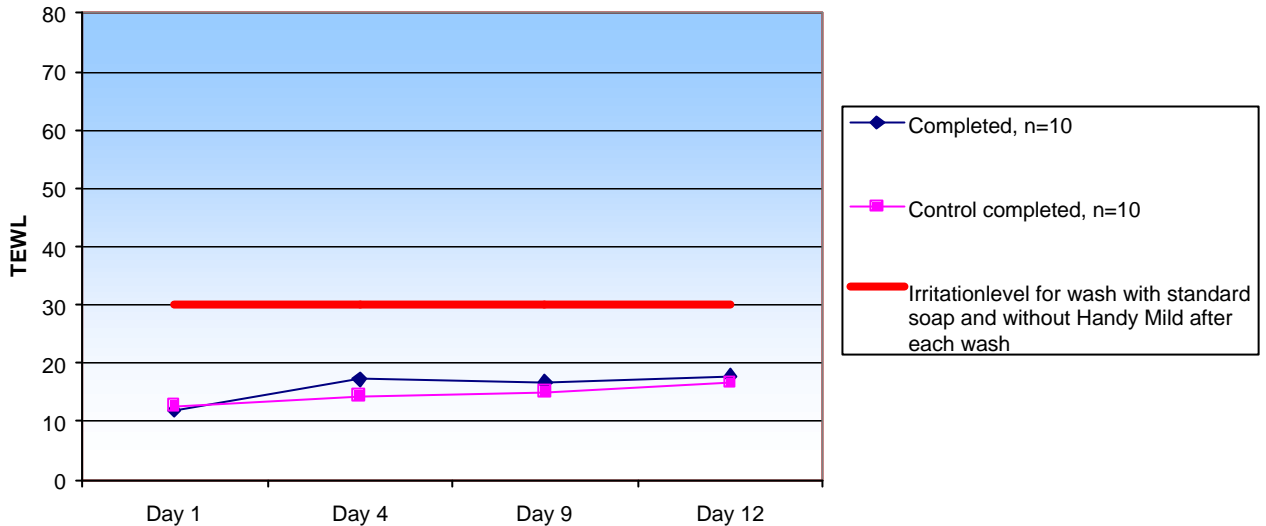
Handy Milds influence on the skins barrier function is documented in proportion to a situation with frequent hand wash, which means a situation where the hands are washed more than 15 times a day. The test is an elbow-wash-test method¹ where the subjects wash the skin in the elbow joint 4 times a day with a 2-hour interval and apply Handy Mild after each wash. The test is performed over a period of 12 days where measurements are made on day 1, 4, 9 and 12. On these days the TEWL² (Trans Epidermal Water Loss) is measured and the skin condition is evaluated and stated with a score. The score is an expression of the visual skin condition combined with the subject's own experience of the skin (itching, blushing, blisters, desquamation, cracks etc.).

**The score for washing with a standard soap³ followed
by the use of Handy Mild after each wash.
N=10**



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TEWL for the wash with a standard soap Followed by the use of Handy Mild after each wash. N=10



Conclusion*:

The regular use of Handy Mild skin care cream improves the skin condition significant in comparison to a situation where only a standard soap is used. A frequent hand wash with a standard soap will normally lead to a TEWL of 30 or more among 30-60 % of the employees over a period of 2 weeks if a cream is not at their disposal. This corresponds an essential deterioration of the skins barrier function.

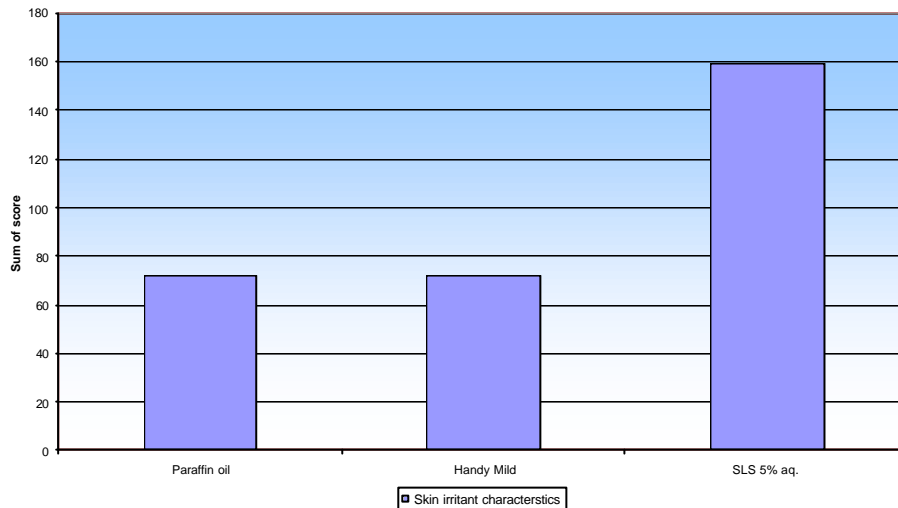
* The test method is approved by The Scientific Ethical Committee and conducted in cooperation with Dermatologist Lars Halkier Sørensen

2. The skin irritation test

The skin irritation effect through the use of Handy Mild has been tested and documented in the Chamber Scarification Test⁴ carried out at OUH (Odense University Hospital) by Professor MD, Ph. D. Klaus Ejner Andersen. The Chamber Scarification Test is an in vivo method where the skin of voluntary subjects is superficially scratched with a scalpel on the test spot before the first applying of the cream. Then about 0,1 ml of the test product is applied and covered by an aluminium chamber. The chamber is then fixed with a plaster. The tests are removed after 23 hours and read after 1 hour. Then a new test is applied on day 2 and 3. The visual score is read on day 2, 3 and 4.

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Extracts from the test results from the report
"Skin Irritation test (Chamber Scarification Test)
performed with 10 skin products at the request of
Plum Hudsikkerhed A/S 23. – 26. January 2001"



Conclusion:

The test result proves that Handy Mild is just as mild to the skin as the mild reference product of the test (paraffin oil). Handy Mild is therefore not irritating to the skin.

3. Hygiene conditions

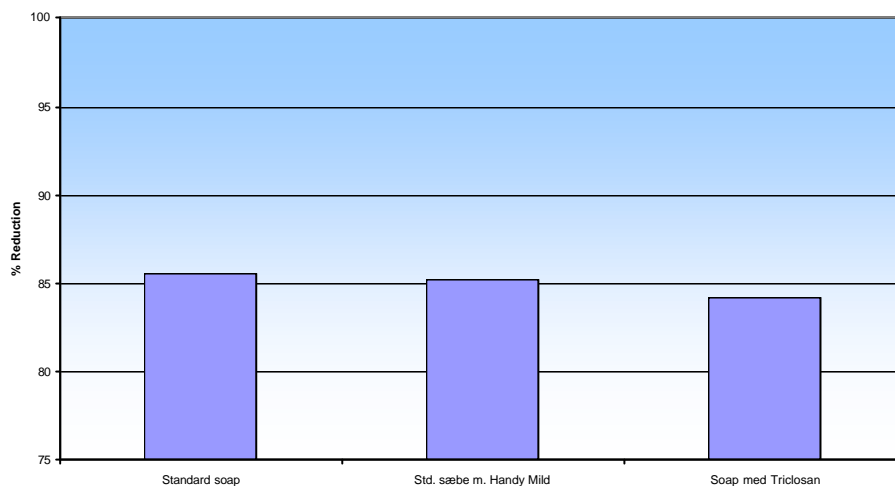
The hygiene effect when using Handy Mild has been tested and documented after a method developed in a co-operation between KVL, MLI (The Royal Veterinary and Agricultural University (of Denmark), The Department of Dairy and Food Science) and Plum A/S⁵. The method is developed with the purpose to document the products hygiene effects in comparison to the handling of foods in practice.

The hygiene studies are carried out by letting the subjects handling a raw thaw chicken with clean hands after a certain and simple procedure. The bacteria flora on the hands was then measured A) after a 45 second contact with the chicken and 3 minutes air-drying of the hands and B) after a subsequently washing of the hands. The reduction is calculated as the difference in % between the situations A) and B).

The studies are carried out both with and without the use of Handy Mild on the clean hands before handling the raw chicken and on hands washed with a disinfectant soap.

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The bacteria reduction



Conclusion:

Considering the statistic uncertainty of such results the conclusion must be that the hygiene effect is identical in all three situations.

The examination proves that the use of Handy Mild as a skin care cream before work does not make it more difficult to remove the bacteria during the washing process. This means that there is no conflicting between the wish of maintaining a healthy skin condition while obtaining a good hygiene.

References/notes:

1. Instruction for the elbow-wash-test of Plum A/S
2. TEWL – a value for the water evaporation of the skin. Must be as low as possible and below 30.
3. Standard soap – a product compounded of typical soap ingredients without compensation for the skin irritating effect.
4. "Skin Irritation test (Chamber Scarification Test) performed with 10 skin products at the request of Plum Hudsikkerhed A/S 23. – 26. January 2001" by Professor MD, Ph. D., Klaus Ejner Andersen
5. Accepted article for the Journal of Applied Microbiology, 2003 v. Tina B. Hansen and Susanne Knøchel, KVL, MLI.

On application to Plum A/S the references and test results above are available.