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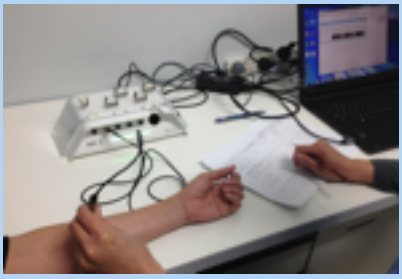
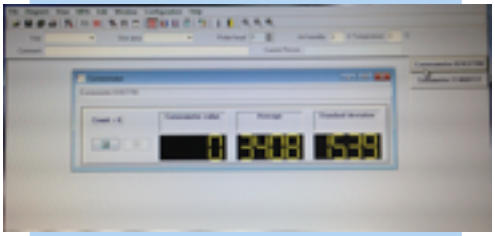
Skin Moisturising

STEPS

1. Corneometer System



2. Measurement



3. Documentation of Results

The procedure for evaluating skin moisturising claims by measuring water conductivity.

Supportable Claims

- **Moisturises the skin**
- **Treats Dry Skin**
- **Protects from drying effect of sun and wind**
- **Replenishes lost moisture**
- **Increase your skins moisture by %**

Technique

Skin hydration is performed using a Corneometer and is usually compared to the baseline (untreated) skin. Test subjects are pre-screened and those identifed as having below normal skin i.e. dry skin types, are used in the test. Skin moisture measurement is performed using instruments which are designed to measure the electrical conductivity of the skin.

How it Works

As the water content of the skin increases, the ability to conduct electrical current is also increased. The hand held probe of the instrument is held against the skin and a very low intensity electrical current passes between two electrodes in contact with the skin surface. The electrical resistance is digitally indicated - high resistance = low moisture and low resistance = high moisture.

In Lab vs In-Use

Most moisturisers will work even after only one product application, so it is possible to perform the test in controlled conditions in a clinical lab at say, 1, 2, 4, 7 hours.
Alternatively, in-use performance can be measured after several days or weeks of repeat applications, depending on intended use and claims for the test product.

Regression

Some formulas will continue to have an effect for a period of time after the last use. The design of the test method allows for this measurement of ... “even works if you forget to use it! “

Analysis of Results - How Many Test Subjects?

When tested on test subjects with dry skin conditions, an effective moisturiser should provide at least 20 to 30% improvement. Provided there is not a high variability between individual test participants, A 10 person study should show significant results.

References

W. Courage, Hardware and Measuring Principle: Corneometer, Biogengineering of the Skin: Water and the Stratum Corneum", edited by: Peter Elsner, Enzo Berardesca, Howard I. Maibach, 1994.

V. Zuang, C. Rona, F. Distante, E. Beradesca, The Use of a Capacitance Device to Evaluate the Hydration of Human Skin, J.Appl.Cosmetol. 15 July-Sept. 1997

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Moisture retention by Conductivity

Instrumentation
C & K Corneometer Model CM 820 PC or CM 825
Skin surface impedance is used to as a determinant of electro- conductivity. This test provides a relative measure of retained water content of the skin as a measure of the skin's dielectric value.

Examples of Claims Supported
"Moisturiser" - "Moisturising formula" "effective Moisturiser" - "increased the moisture level of the skin by... % after ... days of use." Even works for up to ...days after discontinuing use".Skin hydration by instrumental methodology, using a Corneometer versus the baseline (untreated) skin on the same test panelists at 1 day (in-lab) or in-use for some days (typically 7) , with regression up to a further 4 days.

Standards for Inclusion in a Study:
Ages of 18 and 70 not taking medication or under the care of a physician for a period of one month prior- have completed a preliminary medical history - read, understood and signed an informed consent document - free of any dermatological or systemic disorder that would interfere with the results - Individuals with self-described dry skin.

Standards for Exclusion from a Study:
1. Under doctors care - currently taking medication which would mask or interfere with the results - history of sensitivity to cosmetics in general and moisturisers in particular - any form of skin cancer, melanoma, lupus, psoriasis, rosacea, porphyria cutanea tarda, connective tissue disease, or any disease that would interfere with the test results- chronic skin allergies -pregnant or nursing an infant - excessive hair on the test sites

Procedure
Base line readings are determined after test subject skin has been equilibrated with a controlled humidity and temperature environment.
Test site may be nominated and are delineated for corresponding areas..
In order to pre-condition the test sites and keep all topical treatments constant for all test subjects, panelists are required to abstain from using deodorant soaps, moisturising soaps or cosmetic moisturisers on the test area for a period of one week prior to study commencement and during the course of the study.

For Single Day Studies
On the day of the study, test material is delivered to the test sites through plastic volumetric syringes. The material was then evenly applied back of the hands using a glass rod to rectangular area measuring 2.5 x 10cm on the liberally A site of equal size is left untreated to serve as a negative control. Panelists are blinded as to the nature of the material being applied. Biophysical measurements via Corneometer* are taken at t = 0 (pre application). Panelists are required to remain in the lab for the entire initial test period, with further measurements at 2, 4 and 7 hours.
For Multi-day Studies
Product is applied to test area by the test subject according to client instructions.
At further nominated time points, test subjects are brought back to the laboratory for further measurements. In all other aspects, the methodology is the same. Typical time points, 1, 2,4,7, 10 days. Regression after discontinuance of use can also be measured. Measurements performed in triplicate and mean determined.

Reporting:
Measured impedance values and changes for each time point are provided in spreadsheet for, together with means.

Dermatest SOP **DESOP - 033 Procedure for Determining Skin Conductivity using the Corneometer.**

[*Capacitance - Corneometer - fixed units of capacitance measurements representing resistance across a surface - concept - lower resistance equals higher moisturisation (the inverse of conductivity).]