

## Introduction

The Tewitro® TW 24 is the only device to measure the water evaporation from **cultured tissue sets** (wells in a plate with medium) in up to 24 wells simultaneously with the worldwide most used **open chamber** measurement of the **Tewameter®**.

## The Measuring Principle

The Tewitro® TW 24 can be used in up to **24 wells plates** (6x4). Each measurement inlet features two sensor pairs constantly measuring **temperature and relative humidity**, thus measuring in an indirect way the gradient of the water evaporation from the surface of the bottom of the well. This gradient equals the Transepidermal Water Loss typically measured on the in vivo skin surface in **g/h/m<sup>2</sup>**.

## Fields of Application

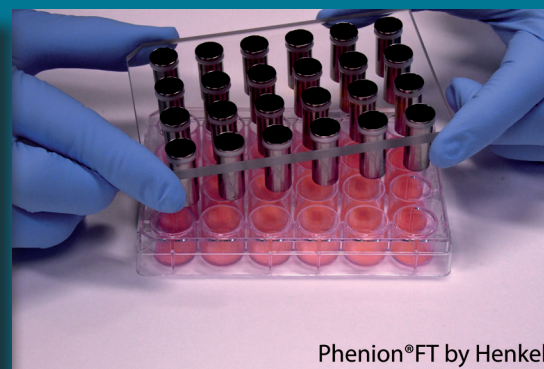
For each product to be applied to the skin, **safety measurements** are indispensable. The use of cultured cells sets for long-term safety tests is a quick and easy method to **avoid using animals or volunteers**.

- Only way to study skin permeability and dermal absorption necessary for **safety and efficacy testing**.
- Well established in different **guidelines** around the globe and approved by institutions such as **ECVAM** (European Centre for the Validation of Alternatives to Animal Testing).

Whenever the barrier is damaged, the evaporation rate will increase immediately. Also for claims related to **barrier improvement/enhancing, tests** on cultured cells are needed, as products meant to keep the barrier intact or to even improve it, can be detected by a stable Transepidermal Water Loss (TEWL).

## Advantages

- All values and **results of each sensor** are clearly represented in the convenient software.
- The probe can constantly measure over **longer periods**.
- The software indicates that the TEWL has reached a **stable threshold** value.
- You can be sure to apply the tested products in repeated tests to cell cultures under the **same conditions**.
- **Control value** of all wells used is recorded before application, so that the later measured effects can be surely attributed to the product.
- Extremely **time- and manpower-saving**.
- Suitable for **Epiderm®, Episkin®**. Please ask for **other adaptations**.
- The **Tewitro® TW 24R** for TEWL measurements on full thickness **reconstructed epidermis** (e.g. Phenion®FT by Henkel).
- Available for C+K **MPA-systems** (with Tewitro® software).



Phenion®FT by Henkel



## Technical Data

Dimensions: 113 (W) x 170 (L) x 32 (H) mm, weight: 300 g, cable length: approx. 1.20 m, frame material: anodized aluminum (AlMg 3), power consumption: max. 12 V; In full equipment: 24 sensor pairs (48 single sensors)  
 Measurement range: Temperature: 0 - 50 °C, resolution: typ. 0.015 °C, RH: 0% - 100% RH, resolution: typ. 0.01 % RH, TEWL: 0 to 320 g/h/m<sup>2</sup>; Measurement uncertainty: for 20-50°C and RH ≤ 80%: typ. ± 1.5% RH, max. ± 2% RH, typ. ± 0.1°C, max. ± 0.3°C; Operating conditions: T: 5-40 °C RH: 30-70 %  
 Technical changes may be made without prior notice.

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