



An *in-vitro* assessment of critical design features to support wound healing using silicone foam dressings

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INTRODUCTION

To ensure the best outcome for patients, advanced wound care dressings are designed to meet the end user requirements, these are identified as critical design features.

ActivHeal advanced wound care range includes a Non-border Silicone Foam Dressing. This dressing is indicated for moderate to heavily exuding wounds and is available in a range of sizes.

ActivHeal silicone foam dressings are a trilaminate construction of a pink film which is a waterproof and bacterial barrier ; an absorbent foam and a gentle perforated wound contact layer coated in silicone.

Performance testing aligned with international standards to assess critical design features has been completed *in-vitro* and compared to a similar non-border silicone foam to show the high performance of ActivHeal Silicone Foam dressings.

TOTAL FLUID HANDLING

CLINICAL RELEVANCE

Total Fluid Handling (TFH) including Moisture Vapour Transmission Rate (MVTR) and Fluid absorbed are tested *in-vitro* as per BS EN13726-1:2002 Section 3.3. This is a critical test to assess waterproof wound dressings that are indicated for ≥24hr wear time when absorption of exudate and management of the micro-environment are important.

Fluid Absorbed The dressings must be able to absorb exudate to avoid the wound remaining saturated.

MVTR The dressing must be breathable in order to allow vapour from the wound out of the dressing to maintain the optimum wound healing environment.

Total Fluid Handling The sum of the fluid absorbed and the fluid transpired through the dressing.

METHOD

This test method cuts a portion of the dressing out and puts it into a Paddington cup, Solution A is added to the dressing and this is put into an environmental chamber at 37°C for 24 hours. Solution A is a deionised water with calcium chloride salts and sodium chloride salts. Various weight measurements are taken before and after incubation in order to calculate fluid absorbed, MVTR and TFH. Testing is completed at 37°C to replicate body temperature.

RETENTION

CLINICAL RELEVANCE

Foams are able to swell and absorb freely, however if they cannot retain the exudate then microorganisms may be released back into the wound which may cause infection and delayed healing time. Retention of exudate in dressings is also critical as this assists in maintaining a moist, not wet, wound environment whilst reducing the risk of maceration.

METHOD

Retention is tested *in-vitro* as per BS EN13726-1:2002. The foam is saturated with 37°C Solution A for 30 minutes, this assesses the free-swell absorbency of the dressing; the dressing has a block applied to compress the foam which is equivalent to 40mmHg; the amount of fluid retained is calculated by weighing the dressing.

SUMMARY

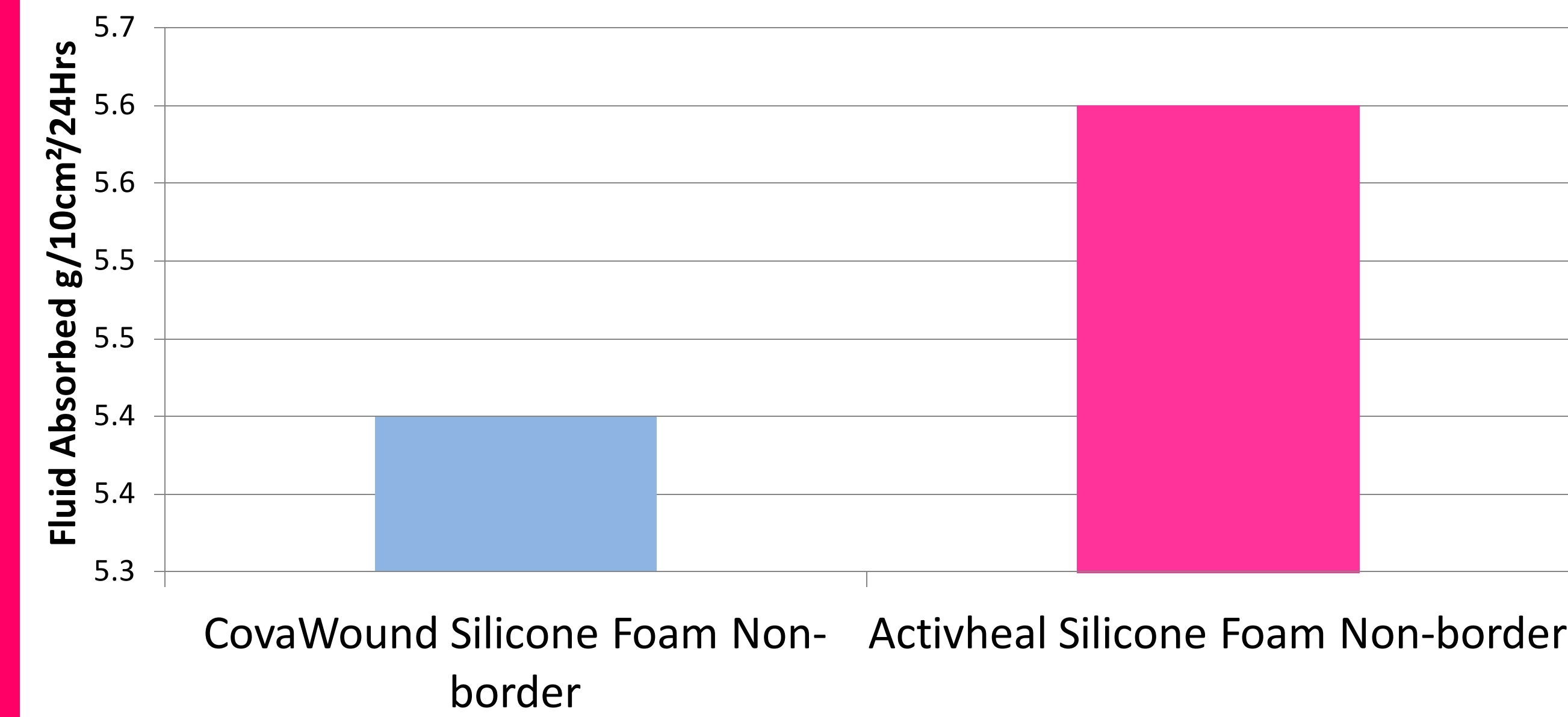
ActivHeal silicone foam non-border outperforms Covalon CovaWound silicone foam non-border in all of the areas assessed in this study.

ActivHeal constructs their dressings with high quality materials to improve the outcome for the patient.

ActivHeal silicone foam range provides the optimal wound healing environment by having excellent fluid handling properties. Managing wound exudate protects the periwound area and progresses wound healing. The atraumatic wound contact layer provides a secure dressing, with pain free removal.

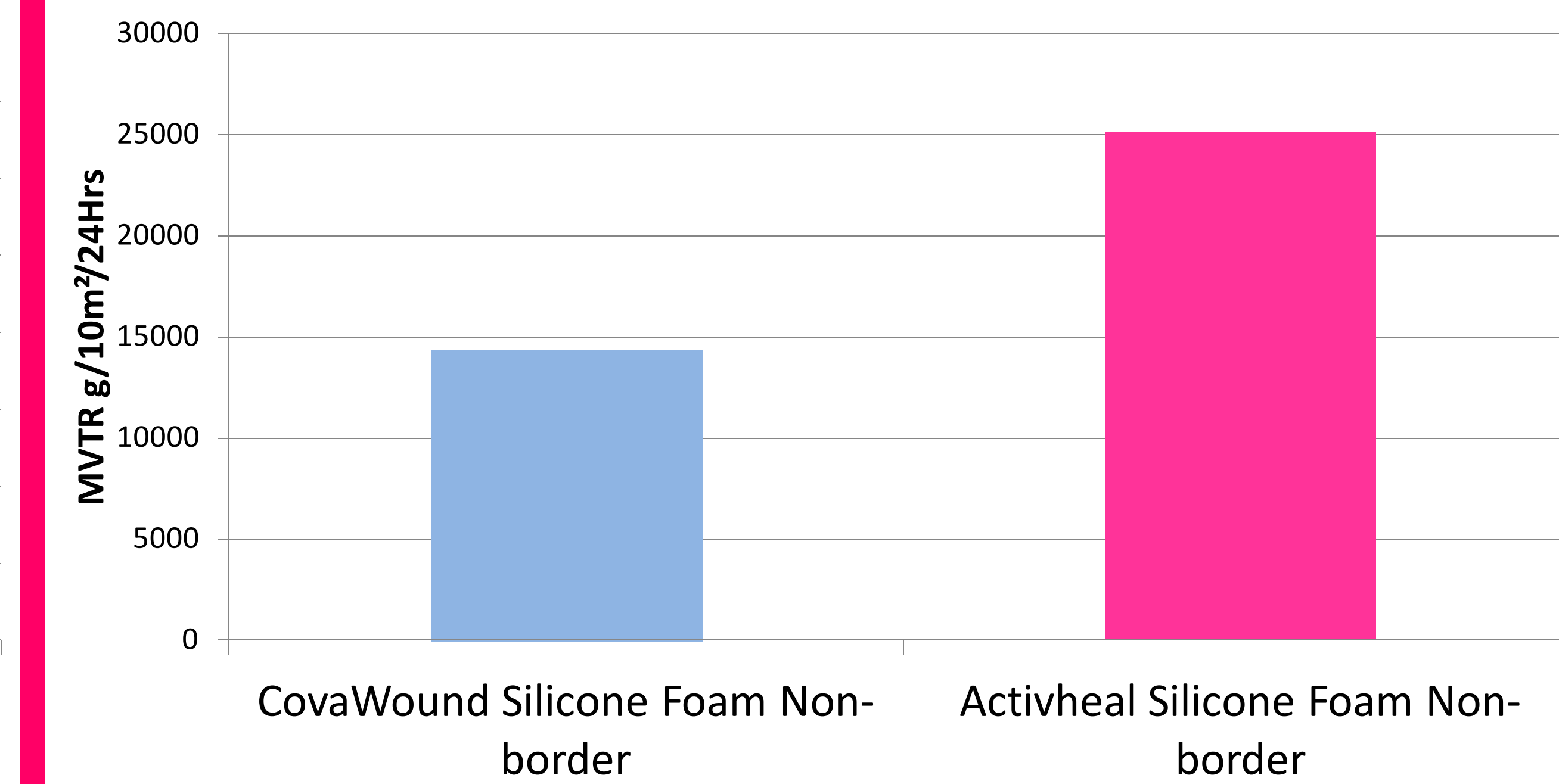
RESULTS

FLUID ABSORBED OF NON-BORDER FOAM DRESSINGS WHEN TESTED AS PER BS EN 13726-1:2002 SECTION 3.3



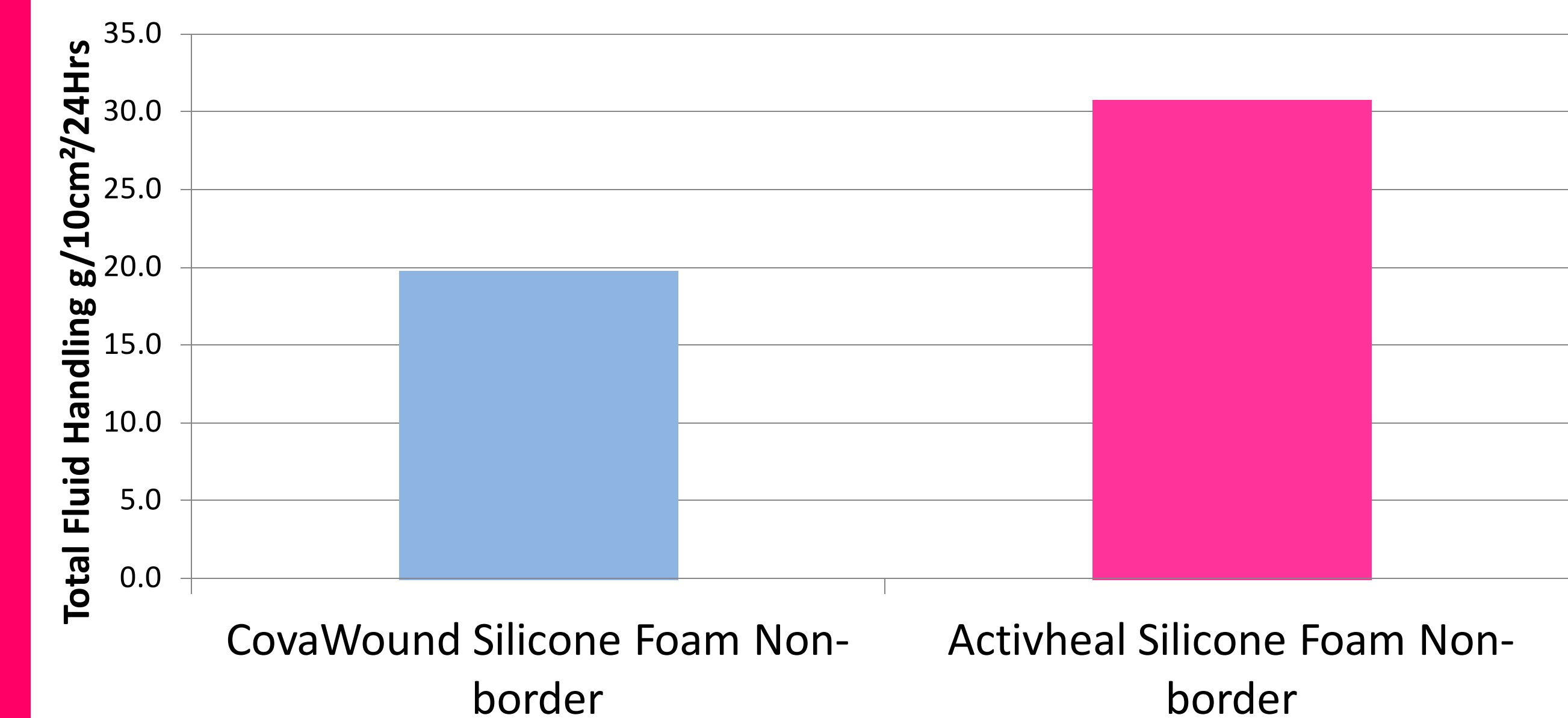
ActivHeal silicone foam non-border dressing absorbs more exudate when compared to CovaWound non-border silicone foam.

MVTR OF NON-BORDER FOAM DRESSINGS WHEN TESTED AS PER BS EN 13726-1:2002 SECTION 3.3



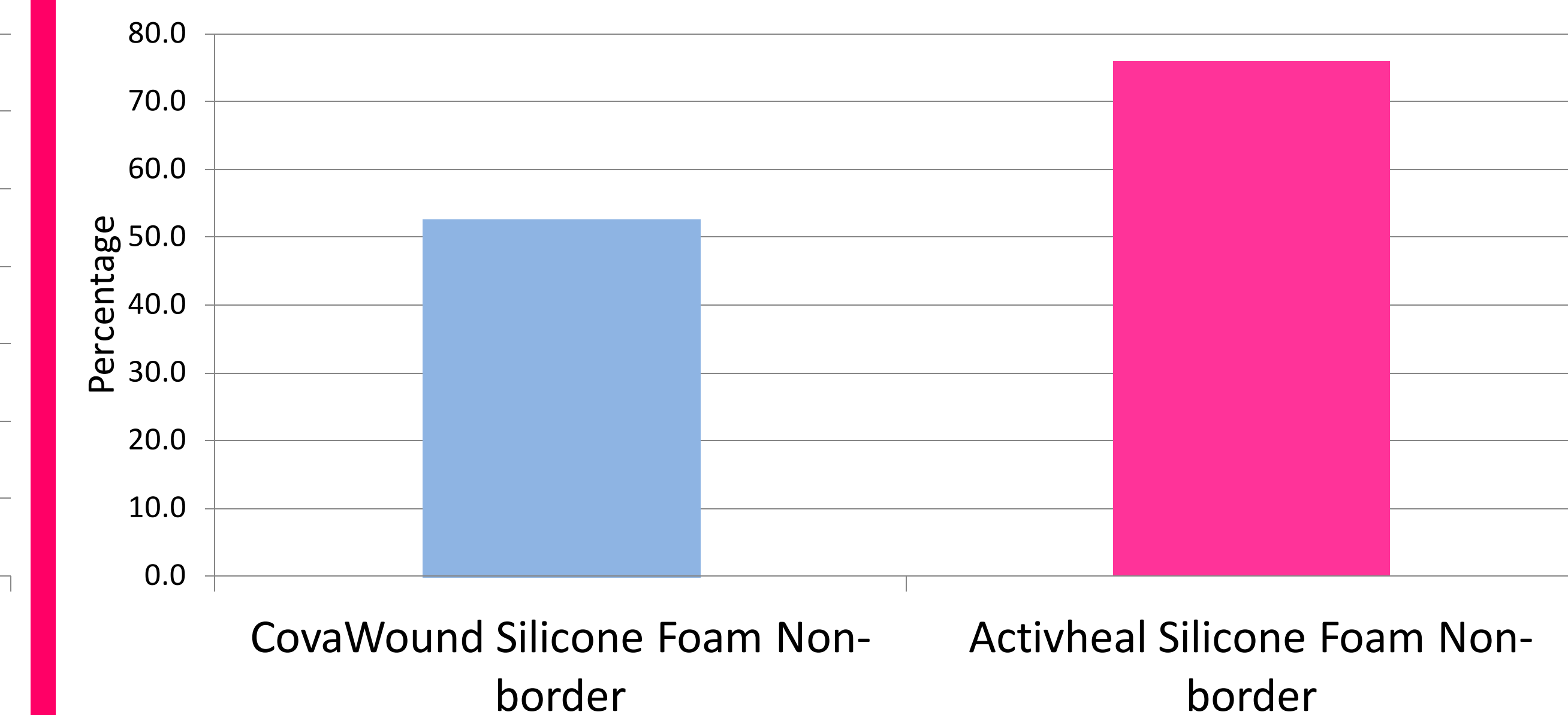
ActivHeal silicone foam non-border dressing has higher breathability when compared to CovaWound non-border silicone foam.

TOTAL FLUID HANDLING OF NON-BORDER FOAM DRESSINGS WHEN TESTED AS PER BS EN 13726-1:2002 SECTION 3.3



ActivHeal silicone foam non-border dressing has better fluid handling capabilities when compared to CovaWound non-border silicone foam.

PERCENTAGE RETENTION OF NON-BORDER FOAM DRESSINGS WHEN TESTED AS PER BS EN13726-1:2002



ActivHeal silicone foam non-border dressing retains more exudate when compared to CovaWound non-border silicone foam.