Geomulse® Cleanse formulation

Personal Care

Geomulse® Cleanse formulation is a cleansing base for facial cleanse wipes. Designed to deliver high-performance skin care with minimal formulation complexity by reducing the volume of ingredients needed, it simplifies processing and formulation steps, making it ideal for both formulators and process technology experts seeking efficiency without compromising on gentleness or efficacy.

Geomulse® Cleanse formulation is a concentrated O/W emulsion formulated to gently cleanse the skin while effectively removing waterproof make-up. Powered by a naturally derived* ingredients, Geomulse® Cleanse formulation is a unique emulsifying system that ensures thorough cleansing without leaving behind any residue. Skin left feeling fresh, clean, and comfortable, ready for the next step in the skincare routine.

Composition

Gossypium herbaceum (cotton) seed oil, aqua/water, polyglyceryl-10 decaoleate, polyglyceryl-10 laurate, levulinic acid, tocopherol and propylene glycol caprylate.

Key features

- Effectively lifts away dirt, oil, and even waterproof makeup like mascara and lipstick
- Naturally derived ingredients*
- Mild and gentle. Suitable for sensitive skin and daily use.
- Cold processable formulation
- Broad compatibility: Works with a wide range of wipe substrates
- Free from:
  - PEG, EO, PO, 1,4-dioxane
  - Alcohol, SLS, talc, mineral oil, silicone
  - Animal derivatives
- Fragrance-compatible: Can be customized with or without fragrance

Intended use

The product is intended to be used for make-up removal wipes manufacturing, to be applied to the substrate upon dilution with water.

Use instructions for makeup removal wipes

- Dilute Geomulse® Cleanse concentrate 10 times with DI water.
- Add preservative and fragrance as required based on your formulation needs.
- Stir the solution at medium/slow speed (200-300 rpm) to ensure complete mixing.
- Apply the solution to the substrate immediately or within 4 hours of stirring preparation.**
- Recommended wipe substrate: liquor ratio of 1:3.5.
- The recommended wipe substrates are as follows: viscose, polypropylene (PP), cellulose, bamboo, polyester (40-60 gsm).

Always homogenize the product prior to application to the substrate as per the use instructions.

Product characteristics

Geomulse® Cleanse Concentrate	
Attributes	**Range**
Appearence	Opaque white liquid
Color	White
Water content	24-40%
pH	4.0 - 5.0

The chemistry

Geomulse® Cleanse concentrate combines Arxada's Geomulse® sustainable polyglyceryl ester technology, known for its cleansing performance, skin moisturizing properties and emulsification performance and mildness to skin, with the moisturizing properties of cottonseed oil and vitamin E. The unique combination of Geomulse® L15 and Geomulse® O3 and cottonseed oil makes for a formula that is highly effective at removing both oil and water based makeup yet mild and soothing to the skin. This makes Geomulse® Cleanse concentrate an ideal system in today's market environment where consumers demand products that are mild and green without compromising on performance.

The data

An in vitro study was conducted to determine the waterproof makeup removal efficacy of wipes prepared with 10% Geomulse® Cleanse concentrate using both biodegradable and synthetic (PET) substrates, representative of the current makeup removal market. In addition, a number of in-market benchmarks making waterproof makeup removal claims were tested.

Test protocol

Eight circular areas were marked on a sheet of synthetic tattoo skin, and L*a*b* measurements were taken using a colorimeter. Subsequently, product was applied using a standard protocol and the sheet was placed in a 37.5°C oven for 20 minutes to allow the makeup to dry, after which the makeup was removed using a wipe under a standard protocol. After allowing the tattoo skin to dry L*a*b* were measured again and the makeup removal efficacy was measured using the equation:

$$\Delta E = \sqrt{\left[(\Delta l)^2 + (\Delta a)^2 + (\Delta b)^2\right]}$$

$$\text{Make-up removal efficacy } \% = \frac{[\Delta\text{E} \cdot \text{after} - \Delta\text{E} \cdot \text{before}]}{[\Delta\text{E} \cdot \text{substrate baseline} - \Delta\text{E} \cdot \text{before}]}$$

* ISO 16128.

** Under certain conditions, although unlikely, minor water separation may occur at the bottom of the container after dilution.

Results

The results of the study are displayed in Fig. 1 and Fig. 2, which shows the makeup removal efficacy for all wipes tested. The results clearly show that when Geomulse® Cleanse formulation, combined with a biodegradable substrate, is tested, it outperforms in-market biodegradable wipe benchmarks under the same testing conditions. At the same time, the makeup removal efficacy of Geomulse® Cleanse formulation combined with biodegradable substrates is a parity with leading in-market non-biodegradable wipes. This is a highly significant observation because, based on the excellent environmental profile of the Geomulse® Cleanse concentrate itself, supports environmentally responsible claims without compromising product efficacy or performance.

Figure 1

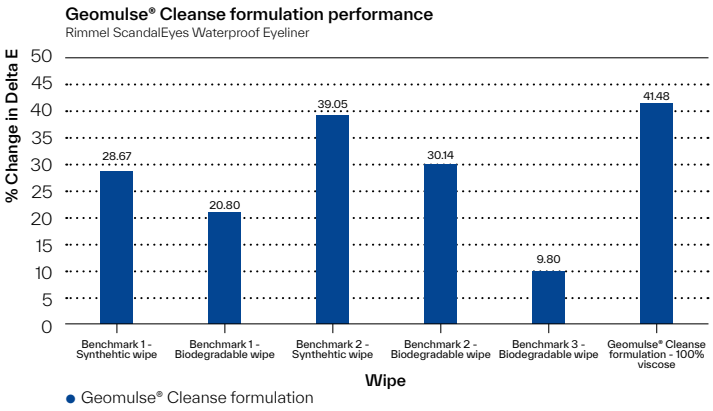

Figure 1:

Graph showing the overall colour percentage change (ΔE) for the Geomulse® Cleanse formulation compared to the market leading benchmarks vs Rimmel ScandelEyes Waterproof Eyeliner.

Figure 2

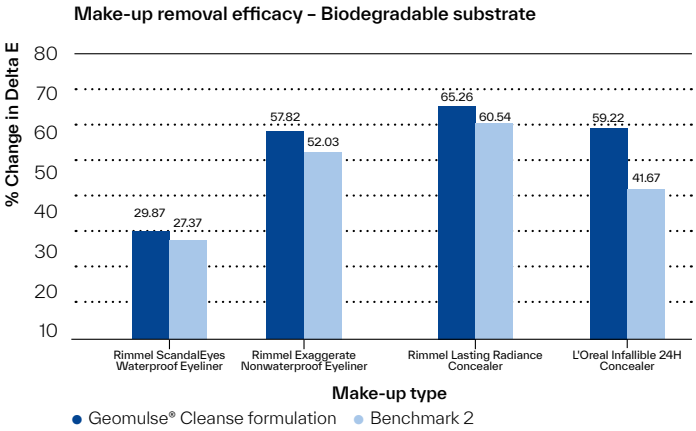

Figure 2:

Graph showing the overall colour percentage change (ΔE) for the Geomulse® Cleanse formulation vs benchmark B benchmarks.

Against different make-up types.

Table 1

Connecting letters report

Sample					Mean (%) change in Delta E
Geomulse® Cleanse – 100% Viscose	A				41.4
Benchmark 2 – Synthetic wipe	A				39.1
Benchmark 2 – Biodegradable wipe		B			30.1
Benchmark 1 – Synthetic wipe		B			28.9
Benchmark 1 – Biodegradable wipe			C		20.8
Benchmark 3 – Synthetic wipe				D	11.9

Table 1:

Tukey Kramer statistical analysis comparing colour percentage change values (ΔE) for the Geomulse® Cleanse formulation compared to the market leading benchmarks.

Figure 3. Geomulse® Cleanse formulation gentle on good bacteria

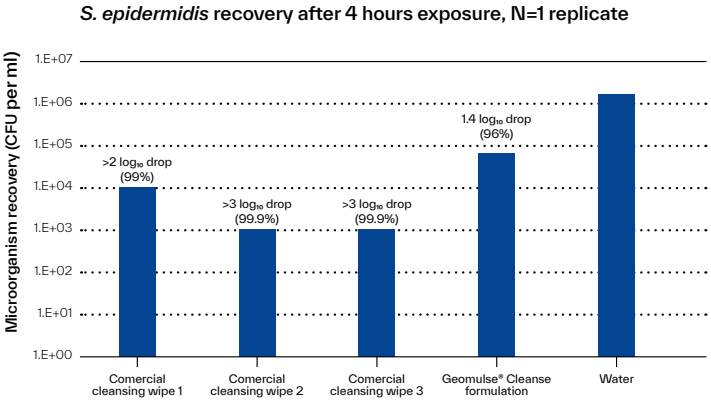

Figure 3:

Staphylococcus epidermidis plays an important role in the maintenance of healthy skin and is considered a good bacteria.

All wipe liquors affected both *S. epidermidis* (good bacteria) to varying degrees over 4 hours. However, the Geomulse® Cleanse formulation had the least detrimental effect compared to the control (saline).

Storage information

- Shelf life 24 months.
- Storage temperature: 5-25 °C, do not freeze.
- Storage condition: In original sealed container.

Shipping instructions

Ensure product does not freeze and keep below 40 °C.

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