

Vivify™ Plus

Environmental
Safeguard



**GREEN
LINE**

INGREDIENTS

ROOTED IN SUSTAINABILITY: Harvesting Resilient Plants from South Africa



THE RESURRECTION PLANT:

Scientifically known as *Myrothamnus flabellifolius*, serves as a unique active ingredient in our product. Sourced from the Cape of South Africa, this plant earned its name due to its fascinating ability to revive during the dry season. Despite its seemingly lifeless state, the leaves quickly regain vitality upon exposure to water, symbolizing resilience. This natural phenomenon has inspired our use of this plant in skincare, where it works to rejuvenate the skin. Thriving in the challenging environments of central and southern African mountains, this plant adapts to harsh conditions, enduring extreme temperature changes and arid winters. Its roots efficiently extract water from rocky hollows, surrounded by erosion debris. *Myrothamnus flabellifolius* often grows in clusters with extensive root systems. During winter, it sheds its leaves and remains dormant for half the year, springing back to life with the arrival of the first rain, demonstrating a significant contrast in size between its dehydrated and rehydrated states.

EXTRAORDINARY RESILIENCE:

Myrothamnus flabellifolius boasts incredible adaptability, thriving in diverse environments such as rocky landscapes and dry gardens. What sets it apart is its extraordinary desiccation tolerance, enabling it to lose up to 95% of its cellular water and endure in an air-dry state until water becomes available again. This remarkable ability is rare among vegetative plant tissues, making *Myrothamnus flabellifolius* a botanical wonder.

SUSTAINABLY SOURCED:

From the Cape of South Africa, *Aloe ferox*, commonly known as the bitter aloe, stands as a remarkable testament to nature's enduring resilience. This unique species, predominantly found in KwaZulu-Natal, showcases distinctive spiky leaves and vibrant red-orange flowers. Growers employ meticulous and manual leaf-cutting methods, ensuring a limited harvest of lower leaves each year to minimize impact on the plant's growth.

Utilizing these plants in skincare products taps into nature's adaptability and revival. *Aloe ferox* demonstrates resilience in challenging conditions, while the Resurrection Plant embodies renewal. The meticulous harvesting methods preserve the essence of these plants, ensuring sustainability for future generations. Our active product is a testament to the harmonious blend of botanicals, offering skin the vitality it deserves.

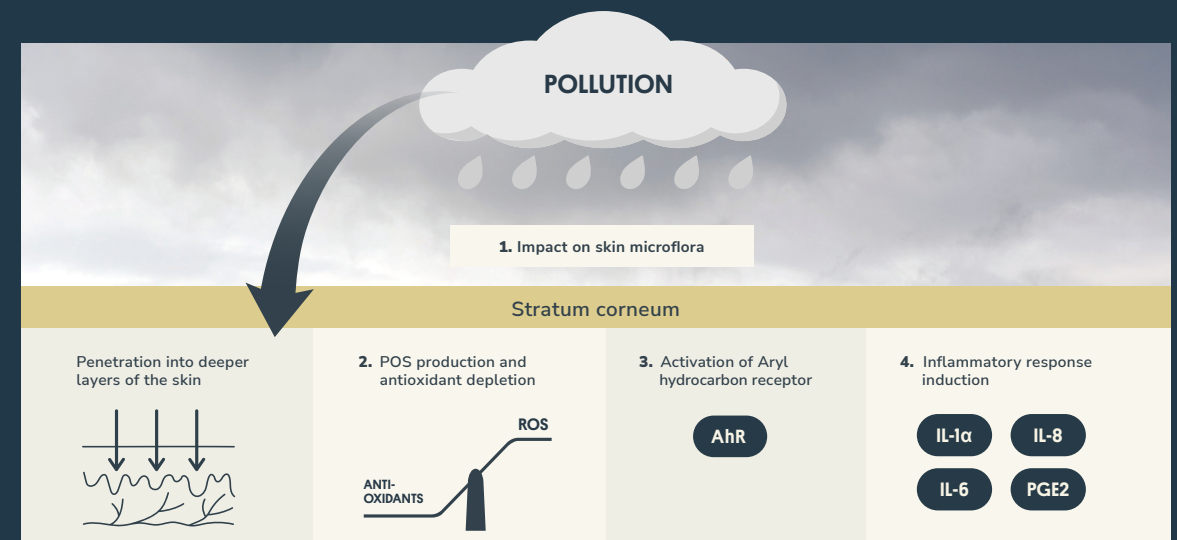


INCI: Propanediol, Myrothamnus Flabellifolia Leaf/Stem Extract, Aloe Ferox Leaf Extract

ENVIRONMENTAL PROTECTIVE EFFICACY of Vivify™ Plus

Pollution can have a detrimental effect on the skin and hair, causing a range of issues from dryness and irritation to premature aging and hair loss. Air pollution can clog pores, increase inflammation, and damage the skin's protective barrier, causing dark spots and wrinkles. It can also lead to hair damage and loss, as pollutants can accumulate on the scalp and weaken hair strands. In addition, pollution can contain harmful chemicals that can cause dryness, itching, and inflammation of the scalp and skin. It is important to protect the skin and hair from pollution, as well as minimize exposure to polluted environments whenever possible.

Skin cells have built-in defense mechanisms to offset the negative impact of Reactive Oxygen Species (ROS). Common environmental pollutants, like NIST1649B, a small particle air pollutant which is also called particulate matter, deplete the antioxidant enzymes in the epidermis. They also reduce the content of other antioxidant substances such as ascorbic acid, tocopherol, or glutathione. As a result, the redox balance is disturbed, causing oxidative stress and damage to the skin cells. Accumulated ROS react with skin lipids, initiating the lipid peroxidation, causing the permeability of the skin barrier to be disturbed.



In today's world, safeguarding both hair & skin against environmental threats is imperative. Vivify Plus™ is specifically designed for the cosmetics industry, providing a sustainable solution to safeguard and nourish both hair and skin, all the while minimizing its impact on the environment.



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INGREDIENTS

Vivify™ Plus For Anti-pollution and Antioxidant Rich Skincare

As people traverse through diverse environments, from suburbs to bustling cities or remote areas, humans inevitably face varying levels of air pollution. The impact of this daily exposure on the skin and hair is often overlooked. The in-vitro treatment with Vivify™ Plus in human keratinocytes, exhibits antioxidant and anti-pollution capabilities, substantiated in a significant reduction of urban dust-induced Reactive Oxygen Species (ROS) levels, compared to the untreated control.

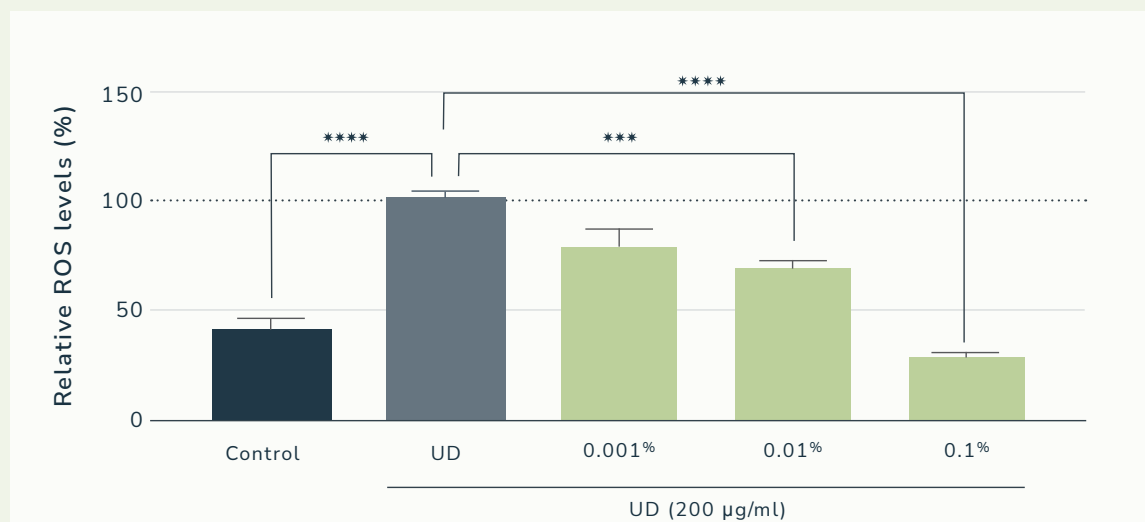


FIGURE 1: Bar graph representing Reactive Oxygen Species (ROS) levels normalized to control urban dust (UD), after 24 hours of treatment in human HaCaT keratinocytes with Vivify™ Plus and subsequent exposure to urban dust NIST1649B (200 µg/ml) for 6 hours. Asterisks (*) over bars indicate statistical significance vs control (UD).

Vivify™ Plus Protects Hair and Scalp from Pollution, UV and Oxidative Stress

UVA radiation, a clinically proven environmental stressor, weakens the proteins in our hair. The in vitro treatment with Vivify™ Plus in Human Hair Follicle Keratinocytes exhibits significant antioxidant and UVA-protective effects, substantiated by a significant Reactive Oxygen Species (ROS) level reduction of 55.2% at a 1% use level.

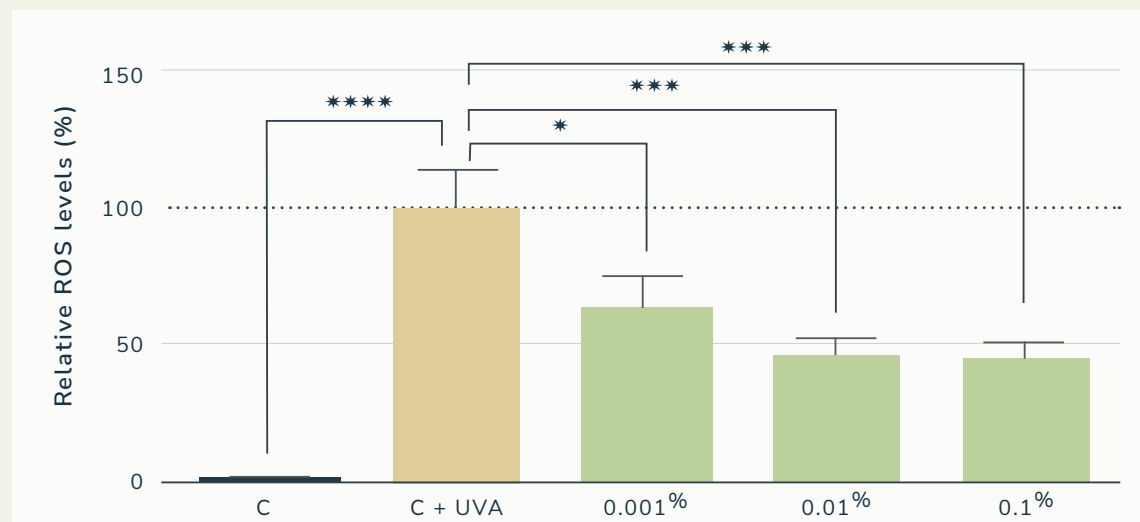


FIGURE 2: Protective effect of Vivify™ Plus from the UVA-induced oxidative stress. Bar graph representing Reactive Oxygen Species (ROS) levels normalized to Control + UVA, after 24 hours of treatment in HHFK with Vivify™ Plus and subsequent exposure to UVA light. Asterisks (*) over bars indicate statistical significance vs Control + UVA (Dunnett's post hoc multiple comparisons test).

Phenol Stability of Vivify™ Plus

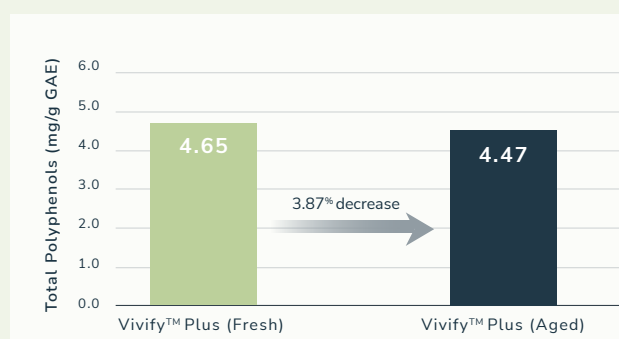


FIGURE 3: Vivify™ Plus' decrease in total polyphenols (%) after storage for 28 days at 50°C. Total polyphenols decreased by 3.87%. The total polyphenols in the fresh sample of Vivify™ Plus were measured to be 4.65 mg/g GAE. The total polyphenols in the aged sample of Vivify Plus were measured to be 4.47 mg/g GAE.

Cosmetic Application: The activity profile of Vivify™ Plus is not expected to change within a year from manufacture date, which allows for longer storage and higher confidence that the material will be efficacious when finally applied by a consumer. Vivify™ Plus can withstand heating up to 50°C during manufacturing without a significant change in activity. Formulators can use the total polyphenol measurement (mg/g GAE) of the fresh sample as a guideline as to how many antioxidants they want to dose into their formula.

SunShield Matte Finish SPF 30

FORMULA CODE: GLP-0003 VERSION DATE: 04/14/23

TRADE NAME SUPPLIER	INCI	%
PHASE A		
Coconut Alkanes (and) Coco-Caprylate / Caprate / Various	Coconut Alkanes (and) Coco-Caprylate / Caprate	12.89
Assure+ / OmyaKinetik	Pongamia Pinnata Seed Extract	0.25
PHASE B		
Solaveil CZ-300 / Croda Inc.	Zinc Oxide (and) Caprylic / Capric Triglyceride (and) Polyhydroxystearic Acid (and) Isostearic Acid	26.50
PHASE C		
Super Sterol Ester LQ / Croda	C10-30 Cholesterol / Lanosterol Esters	10.0
Softigen® Pura / IOI Oleachemical	Caprylic / Capric Triglyceride (and) Hydrogenated Rapeseed Oil	18.0
GLB Laminaria Saccharina Extract SN / Green Line	Helianthus Annuus (Sunflower) Seed Oil (and) Saccharin Latissima (Sugar Kelp) Extract	3.75
PHASE D		
Agenasorb Dry-Ricegel NS 9095 / Agrana	Distarch Phosphate	10.0
Omyaskin 100 OG / OmyaKinetik	Hydroxyapatite (and) Calcium Carbonate	2.0
PHASE E		
Kester Wax K-72 / Koster Keunen	Behenyl Behenate	0.25
Sunflower Wax #258P / Koster Keunen	Helianthus Annuus (Sunflower) Seed Wax	5.00
GreenWax™ CC MB / Green Line	Polyglyceryl-3 Stearate (and) Cetearyl Alcohol (and) PCA Glyceryl Oleate (and) Glyceryl Caprylate	8.00
PHASE F		
Vivify™ Plus / Green Line	Propanediol (and) Myrothamnus Flabellifolia Leaf/Stem Extract (and) Aloe Ferox Leaf Extract	1.00
PHASE G		
Lavender Essential Oil / Various	Lavandula Angustifolia (Lavender) Oil	0.14
Coconut CO2-se Extract / Flavex	Cocos Nucifera (Coconut) Oil	2.00
Bergamot Essential Oil / Various	Citrus Aurantium Bergamia (Bergamot) Fruit Oil	0.22

Please note: The information provided on this formulation sheet is provided as guidance and subject to change. This formula is not intended to be a commercial product.

PROCESSING

- In a suitably-sized main kettle, add Phase A and begin mixing/heating to 75-80°C. Powder should be fully dispersed and batch clear before proceeding.
- When the main kettle is uniform/at proper temperature, slowly add Phase B while mixing. Continue to mix until completely uniform/dispersed.
- If necessary, homogenize to completely disperse Phase B, 30 seconds/1 minute per 100g final batch size.
- Switch back to propeller mixing/side sweep mixing. While maintaining 75-80°C, add Phase C components, one at a time, ensuring complete dispersion of each ingredient prior to adding the next.
- When main kettle is uniform, slowly sift in Phase D ingredients, one by one, while propeller mixing. If needed, homogenize and record time mixed.
- Continue mixing while holding at temperature and add Phase E ingredients one by one, allow batch to mix until all waxes are completely melted and uniform.
- Turn off heat and cool batch to 65-70°C then add Phase F and mix until completely dispersed/uniform. If needed, homogenize and record time mixed.
- Continue mixing while cooling to 50-55°C and add Phase G, mix until uniform.
- When batch is completely uniform, cool slowly to <40°C. Pour into containers at 35-40°C.

FORMULA SPECIFICATIONS (at room temperature)

Appearance: Thick, Viscous Cream, Free of Foreign Matter, TMS.

Color: White to Off-White, No Color Added, TMS.

Odor: Characteristic to Coconut Oil with hints of Essential Oils Lavender & Bergamot, TMS.

pH: n/a

Viscosity: TBD

DESCRIPTION:

Our SunShield Matte Finish SPF 30 is a physical, broad-spectrum SPF with added environmental pollution protection. The unique texture and wearability is created with GreenWax™ CC MB and Vivify™ Plus.

RECOMMENDED PACKAGING:

Jars

RECOMMENDATIONS:

Use Level: 1-2%

Temperature Range: <80°C

Applications:

Restorative hair/scalp treatments

Leave in conditioners

Daily creams and moisturizers

Milky toners

SPF's





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