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HOW ARE NANOEMULSIONS BENEFICIAL IN COSMECEUTICAL FORMULATION?

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WHAT IS A NANOEMULSION IN SKINCARE?

- A nanoemulsion is a type of specialised formulation that consists of tiny droplets of active ingredients or oils dispersed as tiny droplets in water or another liquid.
- The tiny droplets are extremely small and are measured on the nanometre scale (typically between 20 and 200 nanometres in diameter).
- These tiny droplets have a larger surface area compared to larger droplets, allowing for enhanced absorption and delivery of the active ingredients into the skin.

WHAT ARE THE APPLICATIONS OF NANOEMULSIONS IN COSMETICS?

- Nanoemulsions are used in skincare products such as creams, lotions, serums, and sunscreens to improve the product's stability, texture, and efficacy.
- The small droplet size of the active ingredients in a nanoemulsion enhances their penetration into the skin, as they can more easily pass through its outer barrier.
- This can lead to improved skin hydration



WHAT ARE THE ADVANTAGES OF NANOEMULSIONS?

Nanoemulsions are better than other forms of skincare and cosmetic products. The following points explain their advantages-

ENHANCED DELIVERY OF ACTIVE INGREDIENTS

- Nanoemulsions can deliver active ingredients effectively into the skin.
- The small droplet size allows for enhanced penetration through the skin barrier, increasing the bioavailability and effectiveness of the active components, thereby enhancing [skin](#) health [2].
- This property makes nanoemulsions desirable for use in serums like retinol face serum, peptide serum and Vitamin E serum.

CONTD...

IMPROVED STABILITY OF FORMULATIONS

- Nanoemulsions help improve the stability of [cosmeceutical](#) formulations.
- By reducing the droplet size, they prevent phase separation and provide a uniform distribution of ingredients, resulting in improved shelf life and product quality.

TEXTURE AND SENSORY CHARACTERISTICS

- Nanoemulsions can enhance the texture of cosmetic products.
- They create a lightweight, non-greasy, and easily spreadable formulation, providing a pleasant sensory experience during application.



CONTD...

SOLUBILISATION OF OIL-SOLUBLE INGREDIENTS

- Nanoemulsions facilitate the incorporation of oil-soluble ingredients into water-based cosmetic products.

SUNSCREEN FORMULATIONS

- Nanoemulsions are commonly employed in sunscreen products, like medicated sunscreen, matte sunscreen, water based sunscreen and gel based sunscreen.
- They enable the dispersion of UV filters uniformly, ensuring even coverage and efficient protection against harmful UV rays, which can be used to [treat photomelanosis and photo tanning](#).



CONTD...

IMPROVED DELIVERY OF FRAGRANCES

- Nanoemulsions can be used to encapsulate fragrances and deliver them slowly over time.
- This technology helps maintain the scent for an extended period, providing longer-lasting fragrance.

SKIN HYDRATION

- Nanoemulsions formulated with moisturising agents help deliver water and hydrating ingredients deep into the skin, improving skin hydration [3].



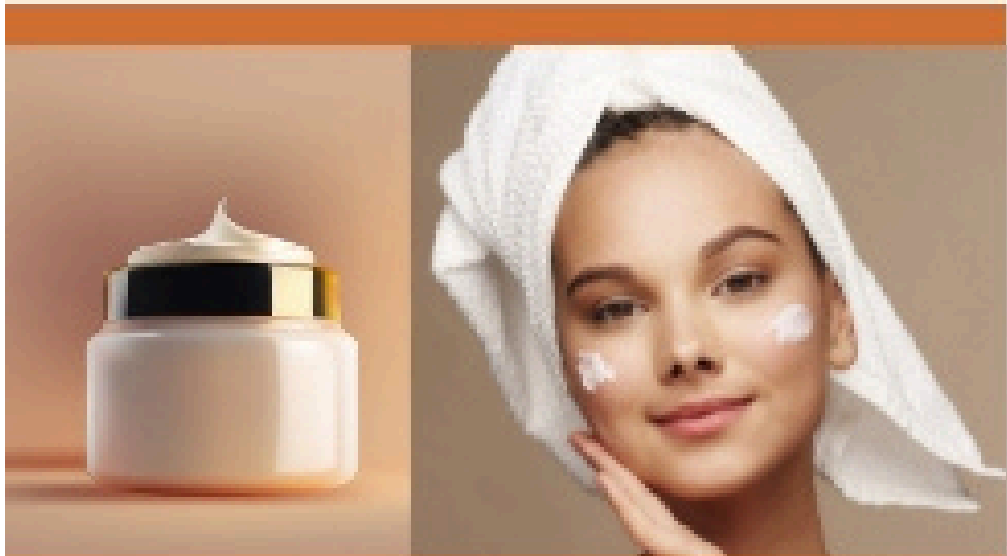
APPLICATIONS OF NANOEMULSIONS



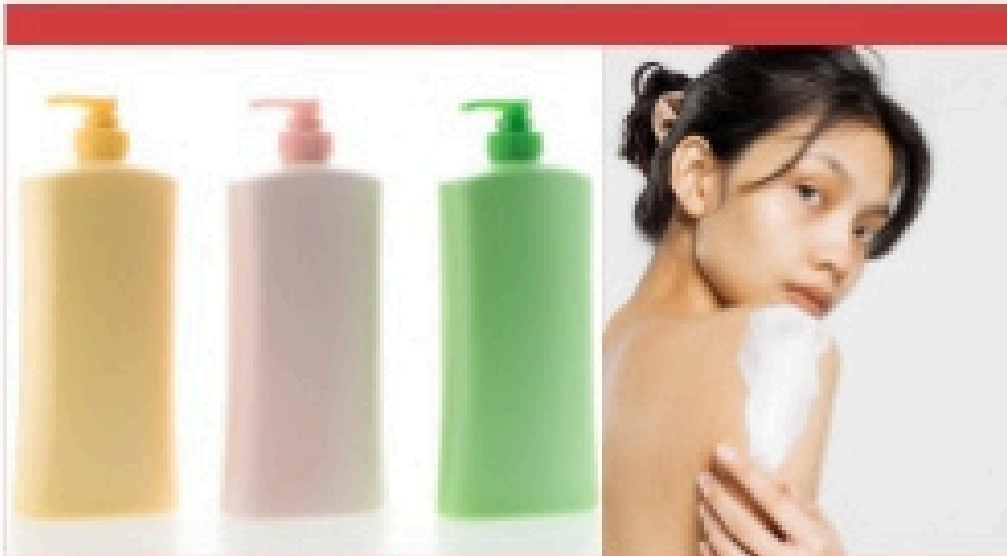
SERUMS



SUNSCREENS



CREAMS



LOTIONS

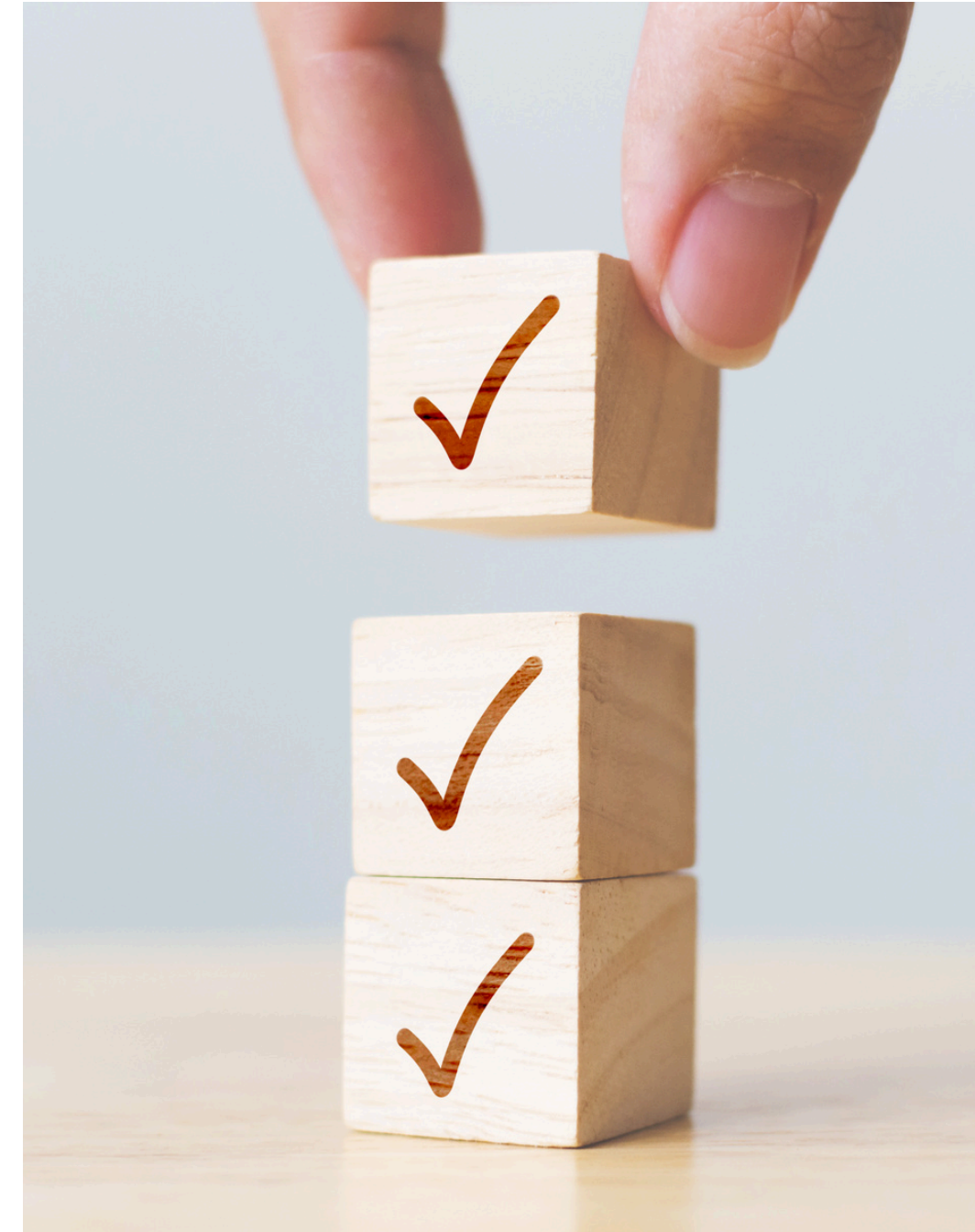
THE FUTURE OF NANOEMULSIONS

- Nanoemulsions are becoming increasingly popular in the [skincare industry](#) since they have numerous advantages.
- The technology for developing nanoemulsions must be in accordance with market trends and consumer preferences and try to incorporate sustainable ingredients and procedures.



CONCLUSION

- Nanoemulsions incorporate tiny particles of oil-based active ingredients in another liquid.
- They have many applications like sunscreens, [fragrances](#), serums and lotions.
- They have better texture and enable deeper penetration of the product.



HOW THE FOOD RESEARCH LAB CAN HELP

- We are [contract manufacturing](#) facility who offer B2B service in new product development.
- We have extended our services from food, beverage and nutraceutical development to [cosmeceutical product development](#) for skincare and cosmetic startups.
- In addition, we offer lab testing of cosmetic products and cosmeceuticals for their safety, quality and efficiency.
- We emphasise using high-quality ingredients in the products and ensure the product meets the regulations, guaranteeing its success.

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