



Leading Edge Innovations – Sustainability Initiative

A widely accepted definition for the term “sustainable” is meeting the needs of the present generation without compromising the ability of the future generations to meet their own needs. The term can be applied to virtually all aspects of life. However, the concept of sustainable development focuses on 17 goals of which the following are most relevant for the Personal Care category.

- Health
- Energy
- Climate
- Eco-systems
- Marine ecosystems

Leading Edge Innovations (LEI) has initiated programs to address each of these categories.

Health

LEI is committed to maintaining the health of the skin. Its objective is to not damage the fragile lipid barrier that is essential for keeping water at a homeostatic level while not permitting the penetration of the irritants and allergens into the sub-stratum corneum layers. This is done by virtually eliminating both the synthetic and natural surface-active agents and aggressive chemicals that can perturb the barrier’s permeation-resistant liquid crystalline structure. It is achieved by employing a processing condition that is dependent on a pressure/volume relationship and not on the mass/temperature relationship practiced by standard emulsification processing. LEI seeks to provide current and leave future generations with a healthier alternative to current personal care practices.

Energy

LEI’s non-traditional processing of the oil and water phases is our proprietary MicroSpense® Technology. Because it is based on a pressure/volume relationship to produce the energy required to manufacture a product, it does not require either long-term heating, aggressive cooling, or high levels of electrical energy-consuming equipment. Instead, the processing is done at room temperature and the components of the formula are only subjected to the processing conditions for a milli-second. The pressure is generated by compressed air. This process is much more energy efficient than conventional practices which use high levels of fossil fuels to produce heat and electricity needed to make the product at the expense of the environment. MicroSpense® Technology conserves energy which can then be available to others in need for an improved quality of life.



Climate

LEI's MicroSpense® Technology utilizes air pressure to combine the oil and water phases of a product. Since air is used to produce the energy to break up the oil and water phases into fine and very uniform hydrophobic spheres and air is the byproduct of the processing, the net negative impact on climate is essentially zero. As a result, the energy created by the burning of the fossil fuels that impact the atmosphere is minimized resulting in cleaner air with a very low carbon footprint versus conventional processing methods.

Eco-systems

Renewable

An important part of sustainability is the use of renewably sourced materials, such as vegetable oils, fermented and naturally based actives, and botanicals. Unfortunately, these materials are often damaged by the presence of surface-active agents or inactivated by the prolonged heating in the presence of air used by the current emulsification practices. Because their properties are compromised by the conventional processing, the aesthetic and performance benefits of the materials are sub-optimal, and, as a result, end-user compliance is minimized. The small micellar size produced by LEI's MicroSpense® Technology imparts different physical properties which are lighter and more emollient in tactile sensation and thinner texturally. Ironically, since there are no extraneous chemicals, these characteristics retain the properties of the renewable oils and hydrophobic actives. Since both the aesthetics and efficacy are typically improved, end user compliance is increased and the consumer's desire to use renewable materials in their personal care products is enhanced.

Animal Testing

LEI does not condone the use of animals to evaluate the safety and efficacy of both raw materials and finished formula compositions in the personal care products developed by the company. We will not conduct studies on animals for any finished product that is marketed in the cosmetic, personal care, and OTC categories. We thoroughly endorse the use of *in vitro*, *ex-vivo*, biochemical, and appropriately run clinical tests to ensure that the finished products manufactured by LEI are safe and effective for the intended population who will be ultimately using the product. We encourage the development of even more precise test methods which will make our products as safe and efficacious as possible.



Marine ecosystems

LEI remains committed to the health of the animal and botanical marine ecosystem. We have worked with marine biologists to determine how materials and formulations to be used by people going into the water impact the sustainability of the coral reef ecosystem. Our MicroSpense® Technology has enabled us to prepare sunscreen formulations that remove UV filters and other marine toxic chemicals that may harm the coral reef yet still retain the high SPF/Broad Spectrum efficacy to ensure the skin is protected against aggressive UV-B (sunburn) and UV-A (aging, cancer) radiation. This high performance is achieved in a product with an aesthetic elegance that helps ensure compliance to the usage instructions.

Conclusion:

Leading Edge Innovations has been founded on and has been continuously dedicated to the proposition of “sustainability”. Our motto has always been “To Do No Harm”, which is embedded in our DNA. We have continuously sought to provide a more sustainable approach to the conventional practices that have caused consumer perception of sensitive skin to skyrocket from 20% of the population to 80% of the population in past 50 years. We have dedicated our entire history to developing and optimizing processing procedures that are better for the current generations as well as the generations to come.