JUN 2021 | ISSUE 6 | VOL 1

NORMACTIVE

NORMAG

CIRCULAR BEAUTY

NATURE FOR FUTURE

Inspiring Brands In Circular Beauty

CIRCULAR ECONOMY

EARTH DAY EVERY DAY

Circular Strategies In Cosmetics

THE WONDER OF SUSTAINABLE COSMETICS: SUPERCRITICAL CO_2 EXTRACTION METHOD

What Is This Technology? What Are The Factors That Make It Different?

normactive's note

Future... We want a habitable world for the future. So, what can be done to protect it? We use many cosmetic products in our daily life from the moment we wake up in the morning until we go to bed in the evening. While using cosmetic products, we must also consider the environment. Can these products be produced without harming both the environment and living things? So what about the packaging? The cosmetics industry produces 120 billion tons of packaging per year. How can this packaging waste be reduced? Some brands and organizations are inspiring us to answer these questions. We examined the differences of the "Supercritical CO_2 Fluid Extraction" method compared to other methods behind the science part of this issue. What are these differences and how do they affect the environment? Can we protect nature with the Supercritical CO_2 Fluid Extraction method? The cosmetics industry is taking concrete steps by giving more importance to sustainability day by day. Why is sustainability so important in an alarming world? Another question is what is the circular economy and what does it encompass? We want the environment to be the winner in the economy-environment relationship. For this reason, we must take steps to support the environment at every point, from production to distribution. Our issue this month has been written for the whole world. We appreciate brands that are working to protect the world.

Love,

NORMACTIVE

We are determined to keep our potential environmental impact to a minimum

nature for future

World! Where we live and where we will live... Can humans live in the future in the same conditions? Aware of the environmental damage caused while in a consumption frenzy? Or ignoring? We cause global warming by damaging the ozone layer. Just like dominoes knock over each other, damage causes other damage, and as a result, a chain reaction of damages occurs. Isn't it time to break this chain reaction? Time is passing... Is there nothing to be done to protect nature? Of course! In every process, from production to packaging, from shipping to recycling, there can be a lot of things done to compensate for our damage to nature. Some brands and organizations are an inspiration to us all in this regard.

Ingredient

Firstly the production of products are must clean and harmless to nature. The cleanliness of the content is also significant for the health of the consumers. While looking for clean ingredient products as consumers, we can safely choose vegan certified ones. So what is the vegan certificate? The vegan certificate is a comprehensive certificate that does not contain animal ingredients or byproducts, not tested on animals, and given to non-GMO products. Another certificate related to product ingredients is also "Cradle to Cradle". To receive certification, products are assessed for environmental and social performance across five critical sustainability categories: material health, material reuse, renewable energy and carbon management, water stewardship, and social fairness. These control assessments are also controlling the product ingredients, while at the same time considering the sustainability, it ensures natural resources. Sustainability... Brands generally prefer first-use ingredients in their products. The rate of waste is increasing day by day. In the UK, 18 million tons of food are dumped each year into landfills. Waste food is not only garbage but also damaging the environment. Brands that are responsive to this issue do not waste these foods in the context of "Circular Beauty", but instead include them in their product ingredients. For example, the Up circle brand takes the waste coffee grounds from coffee shops and the waste fruit seeds from factories producing fruit oils and uses them in their products. The Fruu brand also incorporates over-ripe fruits sold in markets but not bought by consumers into its product ingredients. Thus, they reduce waste and exemplify circular beauty for all of us.

“44% of the population worldwide have water problems

The fact that the product ingredients are not tested on animals is also crucial. "Leaping Bunny", which is a popular certificate known worldwide, points out that the products and ingredients are not tested on animals at any point during. By selecting products with the Leaping Bunny logo, we can protect animals and nature at the same time.

Energy Resources

So what kind of resources are used in general production? How are the water, electricity, and natural gas used in manufacturing generated? Unfortunately, nonrenewable energy sources are primarily used, but these resources may run out one day. Instead of these, it is possible to produce energy in a more environmentally friendly way by using renewable energy sources such as solar, water and wind. With a production of 300,000 MWh clean energy annually, “Aveda” contributes to reducing climate change by using 100% wind power and protects the environment. The "Vapour" also uses solar energy for its energy needs in production. Furthermore, 95% of its products do not contain water, they use water resources very carefully.

"Infuse My Hair" is also a nature-friendly manufacturer that prefers purified rainwater in its product ingredients. While 44% of the population worldwide have water problems, we should all give more importance to saving water.

Packaging

Of course, when sending products to the consumer after production, the packaging is needed. Worldwide, the cosmetics industry produces over 120 billion units of packaging yearly. Plastic is most preferred in packaging, but 91% of plastic worldwide is not recycled and puts many living species of sea and land in danger of being destroyed. Thus, the choice of recycled plastics does not, at least, harm nature any further. Terra Cycle is a recycling company working in this field. This company recycles by reusing the product packaging used by the consumer. Packages that are reused in this way are called post-consumer recycled. Terra Cycle recycles plastic products and helps recycle other materials (bottles, gums, snack packages, etc.).

Thus, while the packages are used over and over again, both energy and material are not wasted. We know or use many brands that recycle their packaging with Terra Cycle, hence protecting nature and reducing waste. On the other hand, the inks used in packaging are another factor that is harmful to nature. To reduce this damage, the company "Sunday Riley" uses soy-based ink in its packaging while "Tula" uses pine-based resin ink in its mailings. As a result, they prefer natural products instead of using chemical-based ink and produce sustainable, environmentally friendly products.

Shipping

As the last step, products are supplied to consumers all over the world by shipping. Different amounts of carbon emissions occur depending on the mode of transportation during transportation. Carbon emission briefly means the release of carbon into the atmosphere and is a factor that triggers global warming. Some companies have established to minimize carbon

“

Worldwide, the cosmetics industry produces over 120 billion units of packaging yearly.

emissions due to shipping. Some companies such as Cloverly and Carbonfund have been established to minimize carbon emissions due to shipping. The main purpose of these companies is to prevent climate change by reducing CO_2 emissions and to ensure that we live in a more sustainable, cleaner world. Every time we behave insensitively, we add a new link to the chain of damages. Why not do more for nature? For nature, for ourselves as well as for future generations. We must do this before it's too late. We have to notice this and restore the world's balance. Nature can exist without us, but we can’t exist without nature, but this is only something only we can do together, maybe you'd like to join us in reading this text right now. This world is for all of us.


Environment is no one's property to destroy; it's everyone's responsibility to protect

the wonder of sustainable cosmetics: supercritical CO_2 extraction method

Environment, health, naturalness... In the last ten years, these three terms have become the most basic triangle of cosmetics. This basic triangle demonstrates the concept of "sustainability" that takes cosmetics to another dimension. With reports of the wellness industry being worth $4.5 trillion in 2019, wellbeing has transformed from a "trend" into a lifestyle. Organic ingredients, recycled packaging, waterless formulas, animal-friendly products and more... With all that the cosmetics industry partners with more conscious, more sensitive consumers under the name of "sustainable beauty". We offer purer, more reliable, more organic products to consumers, so that we are on the side of both naturalness and nature.

Application of natural ingredients in the cosmetics industry represents a promising investment according to the current trends. Global organic personal care and cosmetic products market is projected to grow at a CAGR of 8.7% during the forecast period 2021-2026. All the ways that makeup becomes a product should be sustainably sourced, not just the packaging and content. Lately, a new method of cosmetic manufacturing has allowed for increased sustainability in the supply chain. This method, an innovative "green technology" is know as the Supercritical CO_2 Fluid Extraction Method, and means that both the product its waste are biodegradeable. This new process helps the environment, supports the circular economy, and does not use organic solvents. To understand what this technology is, and why it is so different from previous manufacturing methods, we must go in-depth, to understand the science behind the Supercritical CO_2 Fluid Extraction Method, and how it can be applied.

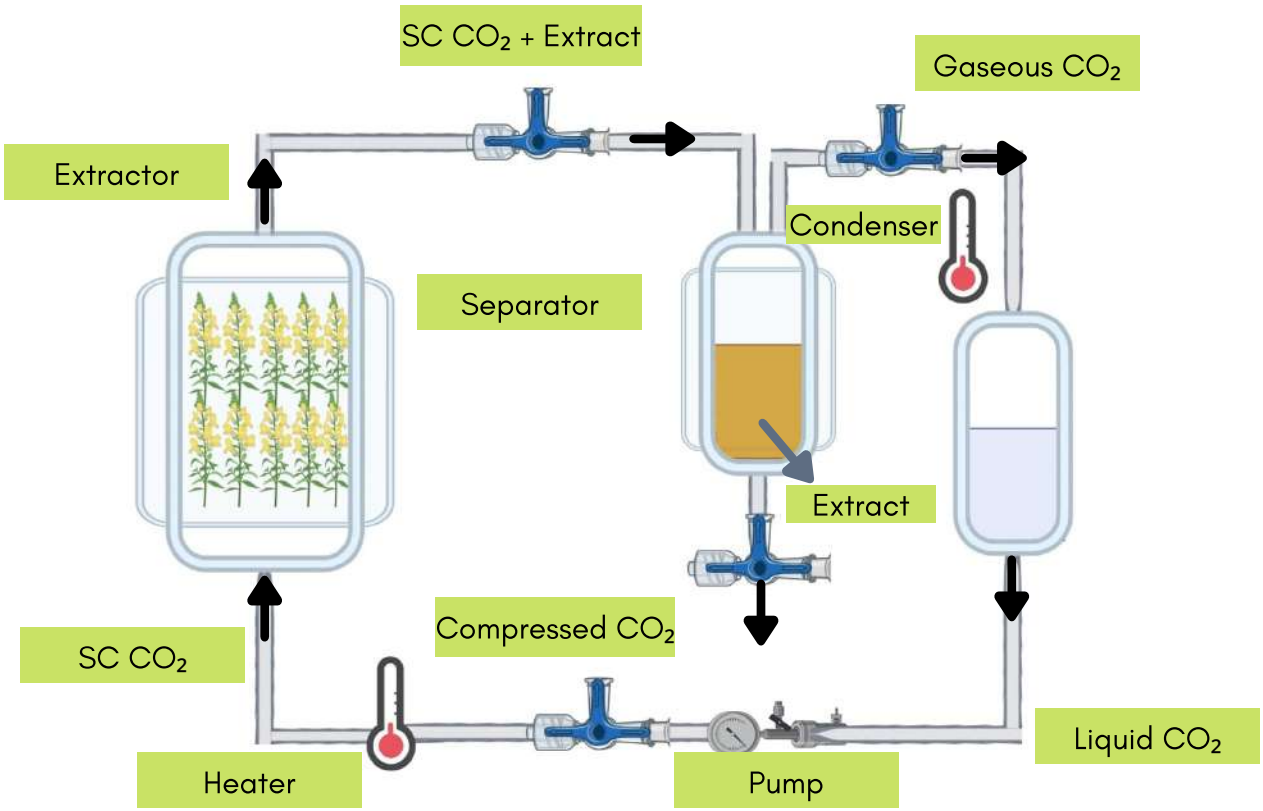
What kind of solvent is Supercritical CO_2?

Carbon dioxide is a compound that is normally gaseous, with a molecule consisting of a covalent-bound carbon and two oxygen atoms. It enables plants to grow both throughout life and during photosynthesis. In order to become supercritical fluid, it must be able to reach high temperature and pressure. Carbon dioxide reaches a supercritical state at 1071 psi (73,8 bar) and 31.1°C. It has both liquid and gas properties in the supercritical state. Supercritical CO_2 is a good solvent as it can easily mix with low molecular weight hydrocarbons and oxygenated compounds.

Its resolution in water is low. Therefore, organic substances can be easily extracted. Since its volatility is high, it is easy to obtain the product purely. It is non- toxic and flammable, so it is environmentally friendly. Economically, the cost is quite low. It has a very low viscosity and has no intermediate surface tension. Therefore, it can penetrate well into any material with a complex structure. It is more reliable and clean than solvents that are toxic, chemical and dangerous, such as acetone, ethanol, benzene. That makes it a "green solvent".

How does Supercritical CO_2 Extraction Method work?

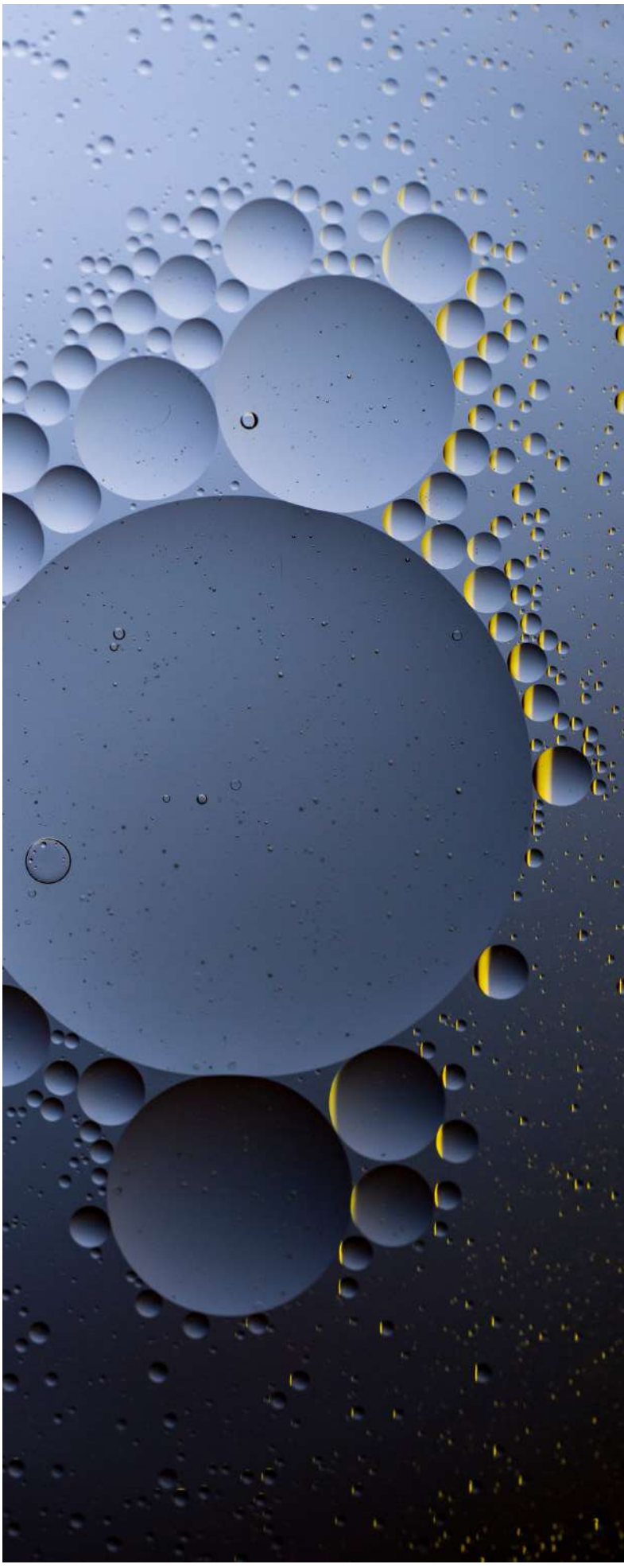
The Supercritical CO_2 Extraction Method, with pressure and process temperature, is a technology in which only the solvent is supercritical carbon dioxide, without water or alcohol. The Supercritical CO_2 Extraction is often used for analytical purposes or to collect the desired product by removing an unwanted material. The most important feature of this method is to be able to perform a selective extraction process by targeting the desired active components. Extractions were performed at several pressures and temperatures to evaluate the influence of these parameters on the selective efficiency. These parameters are also used to increase the yield of the product. The process consists of: CO_2 gas cylinder, CO_2 control pump, co-solvent pump, oven, 10 ml stainless steel extraction container, pressure gauge, automatic counter pressure regulator and restrictor valve, separators, collection container. If we look at the process stage, first of all the plant material must be dried and ground. Then the ground material is poured into an extraction container. The container is then sealed and parameters such as pressure are entered into the system when it is intended to be used. The pressure in the system rises at first. Then the temperature also comes to the adjusted amount.



“

In practice, more than 90% of all analytical supercritical fluid extraction (SFE) is performed with CO_2 for several practical reasons.

Due to pressure, carbon dioxide converts from gas state to liquid. Before going to the plant material separation chamber, a pump sends supercritical carbon dioxide to the extraction container where the plant material is located, and some of the plant material dissolves, connecting some molecules to carbon dioxide and separating from the plant. This system has a sequential series of extract separators. The first separator is set at the highest pressure in the series. The second and third separators ramp downwards in pressure. Compounds of different molecular weights fall at different temperatures and pressures. Thus, different extracts can be created in separate separators. The material collected with the help of a pressure relief valve passes through an opening, the depressurize of the solvent is reduced and it turns back into gas. The extract in the flow is transported from the gas flow to the collection container.



Carbon dioxide is returned to the tank until the extraction process is finished. When the extraction is completed, the pressure is released, the supercritical carbon dioxide becomes gas and quickly dissipates, because carbon dioxide is a gas at room temperature.

What is the difference of this technology?

Product Yield

Extraction requirements of temperature and pressure are the primary parameters that affect extraction efficiency due to their effects on the solubility of a substance. When a lower-pressure extract is produced, a product similar to oils appears, while when a higher-pressure extract is produced, a product with a higher weight and capable of showing the characteristics of the whole plant can be produced. For example, considering a report on palm kernel oil, shorter chain structured products were obtained at lower pressure, while longer chain structures were obtained at higher pressure. High temperature and high pressure negatively affect efficiency. When the pressure is kept constant and the temperature is increased, the density of the solvent decreases. This reduces the strength of the solvent. On the other hand, when the temperature rises at a constant pressure, it reduces the density of a supercritical fluid and solvent strength. The best part of this process is being able to balance these two parameters. The temperature and amount of pressure should be carefully determined according to the type of extract. According to the researches, Gynostemma pentaphyllum seed showed a 53% increase in oil yield with increased pressure from 150 to 300 bar. In this way, all the characteristics of even the most sensitive plant can be preserved.

Quality and Purity

According to conventional solvents containing chemicals or toxics, supercritical carbon dioxide is in both gas and liquid form, leaving no solvent residues in the end product, making the product purer. For example, in a study where cocoa butter was made with ethanol and CO_2 solvents, both solvents give similar results in terms of yield, but ethanol left dirty residue in the extract. The Supercritical CO_2 Extraction Method has a very high quality performance in terms of being able to extract all the active ingredients in the plant and not leave any residue on the extract. It maintains quality without changing the natural bioactivity of the ingredients. This quality is reflected in properties such as color and and all active ingredients are preserved. This proves the purity of the product.

Environmentally Friendly

The fact that carbon dioxide is recyclable into the process also makes the method an environmentally friendly method.

Energy consumption is reduced. In a study, the residual palm kernel meal obtained from SFE process using CO_2 can be a good, low fiber animal feed. Carbon dioxide is a natural solvent. So, the producer can be a certified organic producer. In addition, carbon dioxide acts as a cleaning agent, which allows the destruction of microorganisms during the process. It also provides an advantage in terms of both cost and time. For example, CO_2 is four cents a pound compared to ethanol which is greater than four dollars per pound. No solvent loss, so cost is not affected. Supercritical CO_2 Extraction Technology is a method that deserves to be called "green technology". The Federal Drug Administration (FDA) has labeled carbon dioxide safe for industrial extractions. When you purchase a cosmetic product produced through this method, it is as if you were using the plant directly, and you are helping advocate for new ways to help support the enviroment. It is like hitting two birds with one stone...

black seed oil

Black Seed Oil, like all other NORMACTIVE Oils, are produced in their purest forms without any solvents or alcohol (zero chemicals, 100% pure, 100% natural) by the most advanced extraction technology, Supercritical Carbon Dioxide (CO_2) Fluid Extraction Method. The black seed oil has anti-inflammatory properties thanks to its high thymoquinone rate, while at the same time it is well-aging and soothing.

discover now!

earth day every day

It is 2021 and the Earth had already started giving the alarm long ago. The rising human population led economies to overproduction and overconsumption which resulted in increased pollution and an environmental crisis. As human beings, we live in a world where we are obliged to undo the damage to survive. Actions taken globally, like the 2016 Paris Agreement, are major steps to avoid the dangerous consequences of climate change. However, it is our great responsibility first and foremost as individual consumers as well as cosmetic industry members to take real actions in resolving the crisis that has been created. Luckily for us, there is a global awareness rising in all industries, and the cosmetic industry is no exception.

Concrete steps have already started to be taken. In today's world, cosmetic brands are looking for cleaner & greener solutions for their products, more than ever.

Circular Economy and Corporate Social Responsibility

In 2001, The European Commission clarified corporate social responsibility "as a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on the voluntary basis". This definition paved the way for enterprises to integrate social, environmental, human rights, and ethical concerns into their businesses and have the chance to be a part of the sustainable solutions. This led the idea of Circular Economy to gain importance over time. Because recently, Circular Economy and Corporate Social Responsibility have become converging concepts. Circular Economy can be considered as a discipline that draws from the values of Corporate Social Responsibility and puts them into practice.

Both concepts aim at conservation of ecosystems and biodiversity, sustainable development goals, and sustainable movements at large for people, communities and corporations.

Aiming for sustainable levels of Circular Economy

Cosmetics and personal care industries have one of the most mindful consumer profiles. The demand coming from the consumers for clean products with low environmental impact has strongly encouraged the personal care industry to create environmentally friendly and biodegradable products, without neglecting their quality. To be able to ensure environmental sustainability, companies must follow strict quality and environmental standards. Decreasing CO_2 emissions, consuming less energy and water, and using alternative sources to fossil fuels are at the heart of Circular Economy. Circular Economy is based on three principles: (i) Restrain waste and pollution, (ii) keep products and materials in use, and (iii) regenerate natural systems.

“According to a 2018 McKinsey analysis, only 16% of all plastic waste is re-processed to make new plastics, with 40% of plastic going into landfills and 25% being incinerated.

-McKinsey & Company

So, what should Circular Economy really mean to a cosmetic company?

Measuring the circularity progress of a company is now a challenge and is questioned by many authorities. More details are required to be able to measure the Circular Economy progress of a company. But Circular Economy can simply be defined as a new economic approach reconciling economy and environmental preservation from a social perspective. Circular Economy practices as part of a sustainability approach have six main areas of activities. The identified phases/areas are: (i) Design & Packaging, (ii) Sourcing, (iii) Manufacturing, (iv) Distribution, (v) Consumer Use, (vi) Post-Consumer Use.

1.Design & Packaging

The way product packaging is designed plays a crucial role in its environmental impact. While developing circular packaging to reduce waste, it is important to consider smart design, sustainable sourcing, easily reusable, recyclable, and easily disassembled, which would produce maximum economic and social value. Reusable and refillable packaging options have gained popularity recently, and creative recyclable designs are also available. One of the important things regarding design is the life cycle of the packaging. Rather than theoretically recyclable products, end-of-life must include actual recyclability. Using eco-design supported sustainable packaging alternatives from tree-based products not only a major step towards the Circular Economy, but also limits the bulk of companies that are mostly responsible for their gas emissions. In addition, lighter packaging design in weight is important to ensure less energy consumption, especially during transportation.

2. Sourcing

Preserving biodiversity is the main objective in the sourcing phase of Circular Economy approach. Sustainable agriculture, using vegetable-based raw materials, doing fair trade, responsible and ethical sourcing in order to reduce environmental impact are the actions that must be taken to create a Circular Economy. The raw materials and ingredients must be carefully selected by cosmetic companies that are committed to the environment. Working with local communities can also provide economy and guidance for ethical sourcing. Reforesting is one of the main strategies adopted by cosmetic companies to reduce the carbon footprint and help to rebalance the biodiversity. However, it does not only take to put efforts to reduce the negative impact by investing in reforesting but implementing measures to assess the carbon print and monitoring the actual risks on environment and animals.

SOAPBOTTLE offers a sustainable packaging design made of soap. The soap is made from natural and biodegradable ingredients; waste can be completely avoided.

3. Manufacturing

Many cosmetic companies set goals on increasing the use of raw materials with natural origin to between 80-100%. In the manufacturing phase, the monitoring the production at all stages in terms of water and energy consumption, waste management, greenhouse emissions is key to reduction of consumptions. Mapping the main emission sources in the production line is as important as defining the corrective actions like reducing electricity by implementing ungrouped switches, light sensors, using renewable clean energy sources, self-preserving products to reduce the environmental impact.

4. Distribution

Air transportation is more polluting than sea and road transportations. The transports can be minimized by optimizing packaging and shipment groups to reduce CO_2 emissions. Also, some cosmetic companies are known for setting up carpooling intranet or arranging shuttle bus for employees to reduce the individual mobility as much as possible.

5. Consumer Use

Consumer Phase includes innovation, philanthropy and social aspects. The cosmetic companies can be engaged in campaigns to raise awareness on environmental and social issues. These aims can be offering initiatives in school projects, being attentive to social issues with respect for human rights, gender equality, workers' rights and discrimination, donating part of the earnings to social causes, improving access of medicines to underdeveloped countries.

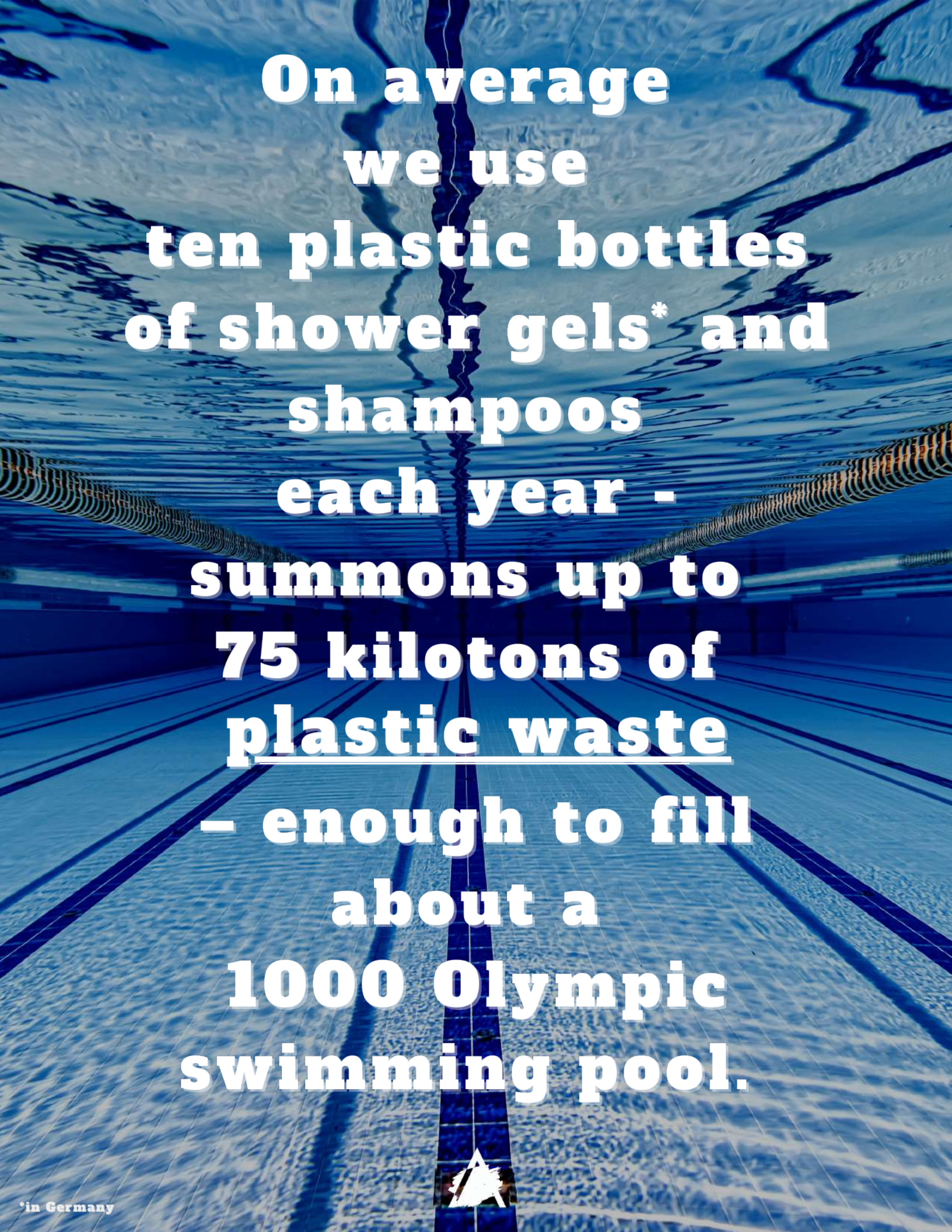
6. Post-Consumer Use

The aim of this phase is to improve products' customer life, minimizing single-use plastics, maximizing recycling and reusing the elements of the products. It requires also dedicated annual statements on "Circular Economy" strategies where the company's Circular Economy approach and actions are explained clearly and shared online with the consumers.

One of the conditions for a company to engage with Circular Economy is to achieve efficient use of resources and more sustainable management. It must stand for responsible consumption and production, including prevention, reduction, and reuse of waste.

Contributing to Circular Economy also requires a change of mentality. Companies should be applying sustainable practices and disclose information on sustainability in their annual reports that allows their progress to be measured. The sustainability approach must be accountable to avoid window-dressing and the mere rhetoric of sustainability.

The actions to be taken in Circular Economy represent a joint strength between business, economy, politics and society through innovation, development, inclusivity and shared value creation, which ultimately will ensure companies a good reputation and a greater visibility.


On average
we use
ten plastic bottles
of shower gels* and
shampoos
each year -
summons up to
75 kilotons of
plastic waste
– enough to fill
about a
1000 Olympic
swimming pool.

*in Germany

Subscribe Us.
Follow Us.
Discover Us.
Contact Us.

NORMACTIVE

@normactivecosmetics

normactive.com

normag@normactive.com

NORMACTIVE