

EcoScent Compass™, a Holistic Tool to Measure a Fragrance's Sustainability Footprint

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In response to demands for more transparency on the impact of its fragrance products on both people and the planet, Firmenich developed a new, holistic digital assessment tool, EcoScent Compass™, to rank both perfumery ingredients and perfumery formulations in terms of green chemistry as well as environmental footprint criteria. Using knowledge gathered in the field of green and sustainable chemistry over the past 20 years, multi-indicator clusters have been deployed and combined into a single index for green properties and environmental impact.

Throughout the 20th century, the field of synthetic organic chemistry has evolved to such an extent that today, in theory, all molecules can be made. New challenges have arisen, however, including the concept of the 'ideal synthesis'. This has become increasingly more important in relation to climate change mitigation. Several years ago, Firmenich started to develop different tools to measure the impact of its products on both people and the planet, culminating in the implementation in 2018 of a new, holistic tool called EcoScent Compass™. This approach embraces the entire process from raw materials to the final perfume, covering all steps, including sourcing, on-site production, and environmental impacts.

In EcoScent Compass™, each individual ingredient and its final perfumery composition were assessed as per three pillars: social impact, environmental impact, and fragrance green properties. The latter was based on green chemistry (GC) principles. This assessment was carried out for the entire manufactured ingredient portfolio and the top 200 (by volume) purchased ingredients.

This communication will focus on selection, calculation, and use of the digital tool to rank perfume and ingredients with respect to their environmental impact and green properties.