ISGC 2019
May 13th - 17th

N°1144 / KN
TOPIC(s) : Industrial chemistry / Alternative technologies

Sustainability Through Green Chemistry

AUTHORS
M. PHILIPPE / L'ORÉAL, 1, AVENUE EUGENE SCHUELLER, AULNAY-SOUS-BOIS

PURPOSE OF THE ABSTRACT

Sustainable innovation [1] is a key-objective for L'Oréal Group which has soon integrated the principles of sustainable development into all stages of a product's life cycle, from its design to consumer use.

This fundamental goal, in line with our commitment to supporting the ten principles of the UN Global Compact [2] is expressed by a clear and ambitious commitment: 100% of products have to bring an environmental or social benefit by 2020.

This objective will be reached in particular by using in our new formulas always more renewable raw materials originating from sustainable resources and compliant with green chemistry.

A renewable raw material is considered sustainably sourced by L'Oreal when traceable from known origin(s) and when the cultivation and harvest activities have been assessed and managed so as to expect the consistency of these 5 sourcing pillars [3]:

? assure decent and safe work for farmers and harvesters

? guarantee equality between workers in the fields and areas of collection

? promote economic empowerment through fair commercial relationship and by assuring economic feedback for farmers and harvesters

? preserve biodiversity by promoting sustainable agricultural and collection practices that respect biodiversity and do not threaten ecosystem services notably those linked to soil, water and forest

? take action against climate change to anticipate impact on crops and mitigate the emissions linked to agricultural practices.

The development of the principles of green chemistry, initially proposed by P.T. Anastas and J.C. Warner [4] and integrated in the Group since 2005 [5] are strategic with the respect of 3 basic pillars:

? Use of renewable raw materials [6],

? Development of eco-respectful processes [7, 8] including enzymatic catalysis and fermentation processes,

? Innovation based on ingredients with favorable environmental impact [8].

These 3 pillars are, for us, inseparable for complying our ingredients with the green chemistry principles. For instance, only adopting the development of eco-respectful processes, although necessary, is not sufficient for the respect of these principles.

Our determined objective is to constantly increase the volume of renewable ingredients in our numerous marketed formula. If the latter are transformed, we commit to use synthesis processes with the smallest environmental impact in compliance with green chemistry principles.

FIGURES

FIGURE 1

FIGURE 2

KEYWORDS

BIBLIOGRAPHY

[1]. J-F. Campion, R. Barré and L. Gilbert, in: Sustainability: how the Cosmetics Industry is Greening up, Wiley, 2014, p.31.
[2]. http://loreal-dam-front-resources-corp-en-cdn.brainsonic.com/ressources/afile/157650-1e0ad-resource_pdf-united-nations-global-compact-communication-on-progress-2016.pdf (accessed 26/04/19)
[3]. J. Hitce, J. Xu, M. Brossat, M-C. Frantz, A-C. Dublanchet, M.Philippe and M. Dalko-Csiba, Current Opinion in Green and Sustainable Chemistry, 2018, 13, 164-169.
[4]. P.T. Anastas and J.C. Warner, Green Chemistry, Theory and practice, Oxford University Press, New-York, 1998, p.30.
[5]. M. Philippe, B. Didillon and L. Gilbert, Green Chem., 2012, 14, 952.
[6]. Q. Zhang, M. Benoit, K. de Oliveira Vigier, J. Barrault, G. Jégou, M. Philippe and F. Jérôme, Green Chem., 2013, 15, 963.
[7]. L. Leseurre, C. Merea, S. Duprat de Paule and A. Pinchart, Green Chem., 2014, 16, 1139.
[8]. J. Hitce, M. Crutizat, C. Bourdon, A. Vivès, X. Marat and M. Dalko-Csiba, Green Chem., 2015, 17, 3756-3761.
[9]. M. Philippe, A. Cavezza, P. Pichaud, S. Trouille and M. Dalko-Csiba, Carbohydr. Chem., 2014, 40, 1.