Trust, transparency and biorenewable surfactants

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ABSTRACT

As consumers become more concerned with the products used in, on and around them, ingredient and product manufacturers are sharing more information on the compositions of personal care and home cleaning products and the origins of the ingredients used. Through labeling, website communication and certifications, surfactant manufacturers are providing transparency to ensure the trust of consumers. Innovations in surfactants derived from biorenewable sources also connect with consumers’ desire for more natural and sustainable products.

If you asked a consumer to sum up their expectations of personal care and home care products, I believe they would respond, “Provide a benefit, and don’t do harm.” As consumers expect brands to be a force for positive change, they are scrutinizing the companies that make these products and the ingredients they use.

According to a recent study by Mintel, 55% of consumers in the United States expect brands to be a force for positive change and 55% say they avoid brands that they believe act unethically (1). Euromonitor International describes this trend as “Mindful Consumerism,” where consumers are “touting for transparency and trust” (2). They are scrutinizing the companies that make these products and the ingredients they use.

Euromonitor International’s 2017 Global Consumer Trends Survey of consumers’ purchasing habits and views on environmental issues found that 26% of respondents stated they avoid eco- or ethically-conscious products that make them feel good (3); 42% of the respondents desired “all natural ingredients” as a sought-after claim in skincare; greater than 20% desired “plant/botanically derived ingredients”; and 20% desired “all organic ingredients” (4). A review of Mintel data for global consumer product launches in beauty and personal care, and household segments, revealed an increase of natural, ethical and environmental claims, 43% and 20% respectively, between 2015 and 2016 (5).

Sodium sulfate and sodium coco-sulfate also contain >85% biorenewable carbon and are used in home cleaning products for detergent and foam. However, in personal care, these sulfated surfactants are being replaced by milder anionic ingredients. Collectively referred to as amino-acid-based anionics, these ingredients are touted for their mildness and natural source. They are derived from biorenewable fatty acids and naturally-derived amino acids. These carbons are sometimes referred to as “green” because they contain carbon sources from renewable plant materials as opposed to “black” carbons that come from petroleum sources.

KEYWORDS: Biorenewable, bio-based, natural, surfactants, consumer transparency, environmental, third-party certification, personal care, household cleaner.

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Alkanolamide surfactants based on diethanolamine (DEA) and monooethanolamine (MEA) have a high percentage of their carbons derived from renewable resources, >75% and >85% respectively (6). However, due to its toxicity, any unreacted DEA derived in these products are a concern to some manufacturers. Alternatives have been introduced in the marketplace derived from renewable plant materials, are still high in bio-based renewable carbon and do not have the toxicity concerns associated with DEA. These alternatives include alkylamides introduced by Stepan Company (10) and alkylglycines introduced by Clariant (11). Both surfactant families contain >85% biorenewable carbon.

It is not just the raw material sourcing of surfactants that are becoming “greenlier;” so too are the manufacturing processes. Many surfactant and emulsifier esters that are used in personal care are based on 100% biorenewable carbon but produced through classical synthetic manufacturing routes. For several years now, esters manufactured through enzyme-based, bio-catalytic processes have been available from Evonik Industries AG (12). These processes arguably are closer to those occurring in nature than traditional chemical manufacturing.

The most natural manufacturing process would be for nature to make surfactants directly. Sophorolipids and rhamnolipids are examples of bio-surfactants produced by microorganisms through fermentation. Bio-surfactants are currently being developed in hard surface cleaners, laundry detergents and personal care products, and are offered by several companies (13). Providing naturally-derived surfactants is only part of the story. Consumers want to know that safe and natural ingredients are being used in the personal and home care products they purchase.

While personal care products have included the ingredients for years, the ingredient information on home cleaning products has been shared as ranges of chemical families, as seen in Europe, or on a voluntary basis as seen in the U.S. Voluntary product claims are more active in supporting consumers’ right to know and new laws are being enacted to improve the transparency of the ingredients used in consumer products. The most recent example is California Senate Bill No. 258 enacted on Oct. 15, 2017 (14). This legislation requires, among other things, a manufacturer of a designated product sold in the state of California to disclose on the product label and on the manufacturer’s website, information related to chemicals contained in the designated product. “Designated products” is defined in part as “a finished product that is an air care product, automotive product, general cleaning product, or a polish or floor maintenance product used primarily for janitorial, domestic, or institutional cleaning purposes” (15). The online ingredient disclosure requirements will apply starting Jan. 1, 2020 and labelling requirements will apply starting Jan. 1, 2021.

Many product manufacturers are not waiting for regulation and use the concepts of “natural” and “renewable” as fundamental marketing platforms to proactively differentiate their products. Product manufacturers can obtain to provide consumers assurances that a product’s ingredients and packaging have been reviewed and found to meet the certifying body’s criteria.

To aid consumers in identifying products that are based on biorenewable ingredients, product manufacturers may set defining criteria and self-report on their websites. An additional option is to use third-party certifications to distinguish natural and safe products. The COSMOS-standard, ECOCCERT, Green Seal and United States Department of Agriculture (USDA) Organic are just a few of the certifications that product manufacturers can obtain to provide consumers assurances that a product’s ingredients and packaging have been reviewed and found to meet the certifying body’s criteria.

Personal care and home care product manufacturers, ingredient manufacturers, regulators and non-governmental organizations (NGOs) are all working to provide consumers the trust and assurance they desire in the products they use in their homes every day. Innovations in biorenewable surfactants by ingredient manufacturers are an important tool in addressing the natural, mild and sustainable ingredients of today and tomorrow.

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ABOUT THE AUTHOR

TERRI GERMAIN is the North America Business Development Manager in Stepan Company’s Consumer Products division. She has more than 30 years of R&D and marketing experience in surfactants and their many uses. Stepan is a leading manufacturer of surfactants and antimicrobials, with recent product launches of biodegradable surfactants as sulfate-free options, solvent alternatives, structured liquids, fragrance solubilization and skin-feel additives.