



### ***The Purpose of this Special Newsletter***

This newsletter is meant to provide information and guidance to businesses and government departments on sourcing cleaning products and personal care products made with sustainable palm oil derivatives. It outlines the complexities in the derivatives supply chain, explains why sustainable palm-based derivatives have been difficult to source in the past, and provides a quick guide to sourcing certified derivatives.



### ***Introduction to Palm-based Derivative Supply Chain***

Palm oil and palm kernel oil are complex commodities because of the demand for a large number of fractions and derivatives of the oils. In fact, about 60% of the palm oil and palm kernel oil consumed globally is in the form of derivatives such as olein and stearin.<sup>1</sup> The supply chains for these derivatives are multi-layered and have been historically difficult to trace. Although traceability is improving, the derivatives can be challenging to source as sustainable.



Oleochemicals, which are produced from the fatty acid distillates that result from the refining process of palm oil and palm kernel oil, are typically used in the production of cleaning products and personal care products. Palm based oleochemicals have a diverse range of applications. In the past decade, many European manufacturers and traders have shifted towards the use of palm-derived oleochemicals (as opposed to petrochemicals or other plant based oleochemicals), due to the increase in the number of plants in Southeast Asia with access to palm

feedstocks. The environmental and social repercussions of this shift in usage, and the parallel significant increase in oil palm plantations in Southeast Asia, have been dramatic, leading to deforestation, climate change, habitat loss, and disruptions to local communities. In order to mediate these impacts, it is important to seek out certified sustainable feedstock.

This info briefing will focus on the issue of sourcing cleaning and personal care products that are made with oleochemicals that derive from sustainable palm oil and palm kernel oil.

<sup>1</sup> <http://www.sustainablepalmoil.org/refineries-manufacturers/refineries/palm-oil-derivatives/>

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## ***Palm Oil and Palm Kernel Oil based Oleochemicals – how they are made and what they are used for***

At the most basic level of the refining process, palm oil and palm kernel oil is split, fractionated, and separated into liquid palm olein and solid palm stearin at a ratio of 4:1. Further refining and blending can then be carried out to produce different oils with unique physical and chemical properties.

Palm-based oleochemicals are produced as by-products of the refining process, before fractionation. There are five basic oleochemicals: fatty acids, fatty alcohols, fatty methyl ester, fatty nitrogen compounds and glycerine. These substances, many of which come from palm kernel oil, are used in cleaning products like laundry detergents, and personal care products like shampoos, toothpaste, soaps and lotions, and cosmetics. They often represent the ‘chassis’ or structural ingredients in these products, and so make up the bulk of the formulations.

For example, fatty alcohols and fatty acids from palm oil are used to make surfactants, which are the basis of almost all products used for personal cleansing, laundering, dishwashing and household cleaning. Cleansing surfactants, also known as primary detergents, are chemicals that reduce the surface tension of water and solubilize fats, so the water can quickly wet a surface and soil can be loosened and removed. In the personal care sector, palm-derived oleochemicals are used as surfactants (used in lotions), emollients (used in moisturizers), and humectants (also used in moisturizers), as well as a viscosity modifier, conditioning agent and antioxidant.



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### ***Palm-Based Oleochemicals in the UK***

In 2009 Proforest published a report<sup>2</sup> estimating the use of palm oil, palm kernel oil and palm derived ingredients in the UK. Unfortunately this is the most up to date report on the sector. Cleaning, personal care, cosmetics and industrial uses were estimated to consume about 10% of the UK total, mostly in the form of oleochemical derivatives. Because the extent to which palm based oleochemicals are consumed by these sectors is not fully tracked and the original feedstock of the oleochemicals is not always known (but expected to be palm kernel oil in most cases), this estimate should be treated with caution. Nevertheless, it shows how prevalent palm-based oleochemicals are.

Figures 1 and 2 below describe the UK supply chains for palm-based derivatives in cleaning and personal care products.

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<sup>2</sup> <http://www.proforest.net//proforest/en/files/mapping-palm-oil-supply-chains-report>

Fig 1. Structure of the UK Cleaning Products Supply Chain, including key players<sup>3</sup>

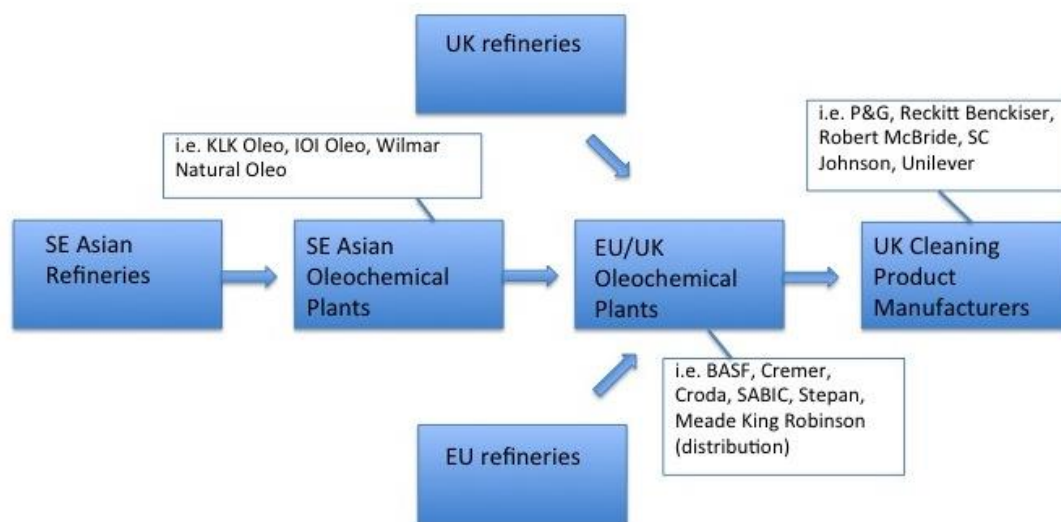
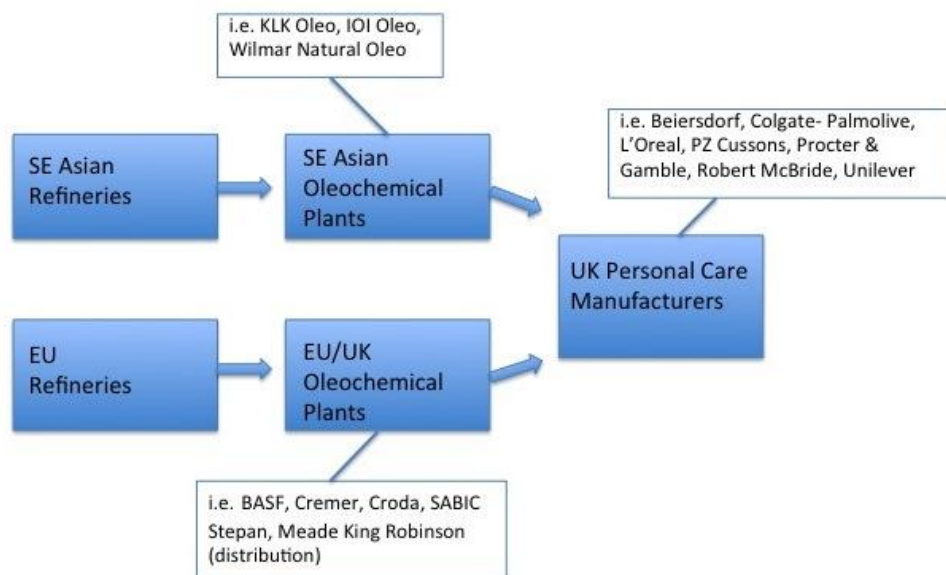


Fig 2. Structure of the UK Personal Care Products Supply Chain, including key players<sup>4</sup>



### ***The Challenges in Sourcing Sustainable Palm Derivatives***

Oleochemical derivatives such as surfactants, glycerine and emulsifiers can be difficult to source from sustainable sources, due to the restraints of the supply chain. This is because palm kernel oil, the feedstock for many oleochemical manufacturers, has a more complex supply base than palm oil. The kernels are often sent to crushing facilities (as opposed to processed by the palm oil mills that produce palm oil from the palm oil fruit) where they can be mixed with uncertified palm kernel. At present, only some of these facilities are RSPO certified. Because the certified

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sustainable cost premium must apply to the original feedstock and then be carried from derivative to derivative to create the oleochemical, the impetus for crushing facilities to become certified is not always present.

Furthermore, major buyers of oleochemicals may not have access to information about the feedstock origin of the chemicals. The oleochemicals can vary and be replaced by other plant-based oleochemicals (i.e. from coconut) or petrochemicals, depending on market price. Therefore, they are often not tracked.

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### ***What can be done? Industry responses***

Together with users and manufacturers, the RSPO has founded a derivatives working group, which has created a methodology for calculating oleochemical derivatives.<sup>5</sup> This methodology is based on a series of conversion charts for each derivative, so that volumes can be used to calculate how much parent oil was used to make the derivative.

Many major industry players have begun working with their suppliers and manufacturers to identify the sources and encourage sustainable production, with some even establishing vertically integrated supply chains that can source segregated material for oleochemical production. Several are now able to supply derivatives covered by GreenPalm certificates or mass balance certification too.

Significant changes towards a sustainable palm kernel supply may require changes in the way oleochemical derivatives are traded, such as greater monitoring and cooperation between buyers to create demand. At present, the majority of companies sourcing certified sustainable palm kernel oil and palm kernel oil based oleochemicals do so by redeeming GreenPalm certificates. This option can help drive change and move the industry towards providing a larger volume of physical CSPO. Many oleochemical manufacturers and cleaning product/personal care product manufacturers in the UK also have commitments to source physically traceable palm oil and palm kernel oil in the near future. As traceability continues to improve, it is worthwhile working with suppliers to source products made with mass balance or segregated certified sustainable palm oil.

Please contact CPET for detailed information on what steps key UK cleaning product manufacturers, personal care product manufacturers and oleochemical manufacturers are taking towards sourcing 100% sustainable and fully traceable palm-based derivatives.

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<sup>5</sup> [http://www.rspo.org/file/RSPO\\_Rules\\_as\\_approved\\_by\\_RSPO\\_EB\\_July\\_2013\\_1.pdf](http://www.rspo.org/file/RSPO_Rules_as_approved_by_RSPO_EB_July_2013_1.pdf)

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## ***What you can do - A short guide to start sourcing certified sustainable palm-derived oleochemicals***

It is important to understand what palm-based derivatives the products that you source may have in their formulations, and map your supply chain. This will allow you to engage with your suppliers, evaluate certification options, and ensure you are sourcing 100% certified product. The steps below produce an overview of the process.

- 1 Calculate the volume of palm-derived ingredients used in your company or organization (separate for palm oil and palm kernel oil derivatives).
- 2 Ask your supplier to deliver mass balance or segregated certified palm derived ingredients. If they cannot deliver this, work with them to achieve certification, or switch suppliers.
- 3 Cover any non-certified volume with GreenPalm certificates, in order to directly send an incentive to growers.
- 4 Claim the use of sustainable products (voluntary).

CPET provides webinars, workshops, flyers, full sourcing guides, supplier questionnaires, and general support and guidance to businesses and organizations on sourcing sustainable palm oil. We can help you to map your supply chain, set targets, engage with your supply chain, and source certified palm oil. Please contact us for further information at [cpet@efeca.com](mailto:cpet@efeca.com) or on our helpline (01305 236 100).

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### ***Further Information***

For further information on the palm oil and palm kernel supply chains, please see GreenPalm's [Infographic](#). It identifies the various processes of manufacture and fractionation, as well as provides example of products.

For more information on RSPO certification, please see <http://www.rspo.org>. For more information on GreenPalm certificates, please see <http://greenpalm.org>.

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