The role of chemical distributors in a more circular economy

European Association of Chemical Distributors (Fecc)
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Increasing recycled content in products while ensuring their performance and safety is paramount. The chemical distribution sector must foster within their community the concept that recycling goes beyond its strict meaning as defined by the Waste Framework Directive (Directive 2008/98/EC). The reutilization of substances could also have a positive effect, if post-treatment cleaning is performed and these substances are reintroduced at another process for another loop (see image below). In this way, it is actually considered a “byproduct”, but these “circular substances” can potentially be used as contents in certain other products. This can be done either as formulations or articles, and these products become more sustainable by reducing waste and CO2 footprint when compared to the corresponding virgin substance.
• Stakeholders from across the board – private companies, academia, and public bodies – can all benefit from circularity in the distribution sector. Fecc is working to raise more awareness for using the same molecules (no change of chemical bonding, no change of the molecule) more than once across sectors. Moreover, the distribution sector can make a huge difference by connecting the dots and creating new opportunities for emerging business models, most especially when integrated with the use of ecolabels at an EU-wide (the EU flower) or at a regional level (e.g. Nordic Swan).

• The promotion of a circular public procurement to empower consumers and public buyers is necessary and must be supported post COVID-19. During the COVID-19 pandemic, the European Commission has shown fast responses in quickly identifying processes to simplify methodologies in regulations without compromising compliance. The pandemic has also shown the need for an efficient – and sustainable – public procurement process in order to keep up with sudden demands for chemicals. For these reasons, to support a circular chemical substances’ market (recycled, re-used or as by-product from the industry), a good balance in value chains is needed.

Fecc agrees with the Commission that high quality recycling relies on effective waste separation to move closer to a ‘less waste more value’ approach. With regards to safety, secondary raw materials can still be compromised. Fecc recognises the fact that banned substances persist in recycled feedstock as valid concern. These banned substances can be mitigated in the feedstock through alternative means. Such mitigation can be performed while supporting the reintroduction of safe secondary raw materials into another process.

In a Danish project* that uses solvents and acids/bases, which are currently disposed of as waste, researchers identified barriers to the substances used - but not consumed - to extend their lifespan by replacing similar new ones used by downstream users. Here are the results:

• Chemical recovery is part of the environmental policy agenda for the circular economy as a practical and tangible way for companies to work with sustainable production.

*From the project (In Danish, see section 2.1 of the Danish EPA report for the quoted summary and conclusions in English)
There are specific technical barriers that need to be addressed. There are impurities in the process chemicals used, for example pharmaceutical intermediates, where players have an interest in that the impurities do not technically impede recycling, but also have no impact on humans or the environment.

Purification is a key consideration in circular chemistry to provide security for both primary and downstream businesses and to manage every single risk.

It is important that existing purification methods are further developed so that they are optimal environmentally and energy-wise, while the obtained purification result meets the requirements of a downstream user.

There is an interest in - and the capacity of - distributors to solve the logistics issues, to contribute to the design of quality requirements and to identify users of circular chemicals.

Fecc supports the initiative on designing modelling tools and harmonizing ways to calculate CO2 savings for “circular” substances. In a Danish sector project on circular chemistry in industrial symbiosis, funded by the Danish Environmental Protection Agency (EPA) and co-piloted by some of Fecc’s member companies, the word “secondary” (secondary materials, secondary substances) has been replaced with “circular” because of the differences in signal value. “Secondary” chemical substances could also be interpreted as “of lower quality” and for this reason cannot be the preferred term. The word “circular” is much more appropriate, as it positively refers to the sustainable history of the chemical substance and it confers a better position compared to the corresponding virgin substance.

Conclusion

As we have recently shared in our response to the Chemical Strategy for Sustainability, at present various chemical substances are frequently wasted and lost as a resource due to difficulties with interfaces and the administrative burden at national levels. A more harmonized internal market is needed, and we strongly believe that the chemical distribution sector can play an integral role to extend the life of these substances instead of letting it be disposed of as waste. This process can also provide unique possibilities in linking new value chains and extend the lifespan of these chemical substances.