

Enzymes contribute substantially to pollution prevention and control and other environmental objectives of the EU Taxonomy on Sustainable Finance

Recommendation for policy-makers

The production of enzymes and enzyme-containing chemical products should be recognised as contributing substantially to ‘pollution prevention and control’ and ‘transition to a circular economy’ objectives under Taxo4 given the significant sustainability contribution of enzymes in a wide range of applications:

1. Enzymes should be **excluded from the list of Substances of Concern (SoC)**.
2. The **substantial contribution of enzymes to pollution prevention and control**, and other sustainability objectives, **should be recognised**.

AMFEP and EuropaBio welcome the European Commission’s objective of promoting sustainable investments, which are crucial to incentivise investments in biological, safe and sustainable substances, like enzymes. AMFEP and EuropaBio also welcome the Platform on Sustainable Finance’s (PSF) [supplementary report](#) with recommendations on technical screening criteria for environmental objectives 3-6 of the EU Taxonomy and the efforts of the PSF to ensure coherence between the Taxonomy criteria and the Ecolabel criteria for detergents, in which enzymes are explicitly derogated from the ban on respiratory sensitisers based on their safety and inherent sustainability contribution.

Excluding enzymes undermines ‘pollution prevention and control’ and other objectives

The [PSF recommendations](#) exclude the production of enzymes under **2.14 ‘Manufacture of chemicals’** and enzyme-containing chemical products under **2.15 ‘Manufacture of chemical products’** (unless the product group is covered by EU Ecolabel criteria or an officially recognised national or regional scheme) from the Taxonomy criteria on chemicals.

- In **2.14 ‘Manufacture of chemicals’**, enzymes are excluded from the scope of the criteria *“due to the difficulties of applying to [enzymes] this general hazard-based substitution approach”*.
- In **2.15 ‘Manufacture of chemical products’**, the rationale for excluding enzymes is based on their categorisation as ‘substances of concern’ (SoC), although the PSF emphasises that substances that fall under the SoC definition could nonetheless be Taxonomy aligned under another set of criteria.

While we welcome the fact that enzymes could be exempted from the substance of concern definition, there also needs to be positive criteria for the enzymes industry. Without this, key segments of the enzymes biotechnology sector will not qualify as environmentally sustainable based on the Taxonomy criteria. This conflicts with other EU objectives for replacing harmful chemicals with safe, bio-based and sustainable alternatives (EU Bioeconomy Strategy and Chemicals Strategy for Sustainability), and ignores the irreplaceable contribution of enzymes to the environmental objectives of the Taxonomy Regulation.

Enzymes have a history of safe use

Enzymes have been used safely for decades by workers due to product design and guidance, and no consumer incidents have been reported in Europe for the past 50 years. This is supported by studies that show that sensitisation to enzymes is not an issue for the general population or the most susceptible part of a population, whilst occupational safety has also been demonstrated via studies and exposure scenarios.

The safety and sustainability of enzymes is enshrined in ecolabel schemes. Enzymes are specifically derogated due to their safety and benefits that cannot be achieved by other substances. Therefore, enzymes should not be defined as substances of concern in the enabling criteria for activities 2.14 and 2.15 – ‘Manufacture of chemicals’ and ‘Manufacture of chemical products’ – and should have a set of criteria through which their substantial contribution to the green transition can be recognised.

Recommendations

1. Enzymes should be excluded from the list of Substances of Concern (SoC)

Given the long history of safe use and ample evidence that enzymes are used as substitutes for hazardous chemicals in a wide range of industrial and consumer products, contributing to the environmental objectives of the Taxonomy, AMFEP and EuropaBio recommend that enzymes be excluded from the list of SoC and products under activities 2.14 ‘Manufacture of Chemicals’ and 2.15 ‘Manufacture of Chemical Products’ (as with EU Ecolabel and Nordic Ecolabel criteria, under 2.6 ‘Finishing of Textiles’ in the PSF Recommendations and under 1.1 ‘Manufacture of plastic packaging goods’ in the [Environmental Delegated Act](#)). Failure to do so will discourage investments in safe and sustainable alternatives to chemicals, go against the environmental objective of ‘pollution prevention and control’ and disrupt innovation in safe and sustainable substances like enzymes.

2. The substantial contribution of enzymes to ‘pollution prevention and control’ and other sustainability objectives should be recognised

Enzymes are indispensable to the objective of a ‘Substantial contribution to pollution prevention and control’ in the criteria for 2.14 ‘Manufacture of Chemicals’ and 2.15 ‘Manufacture of Chemical Products’ as outlined in the PSF Recommendations. As biological catalysts, enzymes by definition significantly reduce CO2 emissions, energy use and raw material usage and waste ([link](#)). The sustainable contributions of enzymes are well recognised and also described in a recent [REACH Risk Management Option Analysis \(RMOA\) report](#).

About AMFEP

AMFEP is a non-profit European industry association created in 1977. AMFEP currently has 30 members, representing over 90% of the European and over 80% of the world enzyme market. AMFEP serves as a hub for information exchange and dialogue between enzymes producers and formulators, industry organisations, the scientific community and policy-makers and promotes co-operation on regulatory and safety aspects of enzymes. For further information about AMFEP, please visit [our website](#).

About EuropaBio

EuropaBio, the European Association for Bioindustries, promotes an innovative and dynamic European biotechnology industry. EuropaBio and its members are committed to the socially responsible use of biotechnology to improve quality of life; to prevent, diagnose, treat, and cure diseases; to improve the quality and quantity of food and feedstuffs and to move towards a biobased and zero-waste economy. EuropaBio represents corporate and associate members, plus national biotechnology associations and bioregions. Read more about our work at www.europabio.org.