

Product Stewardship - Microcontaminants - (updated April 2025)



Good To Know

SMILE = *Syensqo Micro-contaminant Level Evaluation*.

INTRODUCTION

The *Syensqo group* started the **SMILE** (Syensqo Micro-contaminant Level Evaluation) campaigns in the 2000s.

The aim is to annually monitor polychlorinated dibenzo-p-dioxins (PCDDs), polychlorinated dibenzofurans (PCDFs), dioxin-like polychlorinated biphenyls (DL-PCBs) and non-dioxin-like or indicator like polychlorinated biphenyls (NDL-PCBs) content in products for *sensitive applications* (*) sold by the Syensqo Group. It is imperative to ensure a systematic and regular program of analyses for these products in order to control the risks associated with their marketing as well as possible and to make sure that they do not endanger human or animal health.

The analyses are based on sophisticated methods such as *coupling gas chromatography* and *high-resolution mass spectrometry*. The analyses are conducted by two internationally recognized external laboratories which are both GMP+ certified (animal feed sector).

The samples submitted for analysis are selected by the Product Stewards of the respective GBUs. Certificates for the GBUs' customers are issued every year at their request and based on the analytical data obtained.

*Sensitive Applications

Food, animal feed, cosmetics, pharmaceuticals, medical devices, food-contact, detergents, biocidal products, water treatment...

OVERVIEW OF DIOXINS & PCBs

Dioxins and *polychlorinated biphenyls* include a range of substances that are toxic and persistent for the environment. The terms most often refer to 29 polychlorinated dibenzo-p-dioxins (PCDD), polychlorinated dibenzofurans (PCDF) and dioxin-like polychlorinated biphenyls (DL-PCB) congeners.

- The dioxin and furan congeners are unintentional by-products of the combustion processes and certain industrial processes such as pulp-bleaching or the manufacture of chlorinated products.
- PCBs are synthesised by direct chlorination of biphenyl and can be divided into different groups according to their biochemical and toxicological properties:
 - Non-ortho and mono-ortho substituted PCBs have toxicological properties that are similar to dioxins. Therefore they are called *dioxin-like PCBs*.
 - The other PCBs do not have toxicological profiles similar to dioxins and are therefore called non-dioxin-like PCBs or indicator PCBs. Nevertheless, legislation, where there is any, requires the tracking of six indicator PCBs.

LIMIT VALUES : REGULATIONS AND RISK ANALYSES

For food uses, and given the applications of *Syensqo's* products, the regulatory requirements only concern animal feed applications, at least within the European Union. In fact, since 2001 and in the light of the succession of dioxin crises that have broken out in Europe, the *European Commission* has adopted two directives (which have subsequently become two regulations) setting legally binding limits (strict but realistic) on the presence of dioxins and PCBs in animal feed and human food. Any feed for animals or any raw materials in this feed (including additives) that exceed these strict limits have to be removed from the animal food chain. Subsequently, the Commission has set action thresholds for animal feed, which constitute a "rapid alert system", designed to trigger a preventive approach with a view to identifying the sources and exposure pathways and to set up corrective measures to eliminate them promptly.

For other applications, not directly regulated, anybody responsible for the placing on the market of food products, pharmaceuticals, cosmetics, etc., is responsible for ensuring the safety of said products and to make sure that they are not harmful to the consumers or patients health. In this context, risk assessments have been performed on various *Syensqo* products in relation to several sensitive applications. The risk assessments were based on daily exposure (ingestion, inhalation, skin contact, etc.) and on the Tolerable Daily Intake (TDI) expressed as toxic equivalents, as defined by the *World Health Organisation (WHO)*.

The application that leads to the greatest human exposure is used as a basis to determine the acceptable maximum value in the product (expressed as TEQ/kg product).

Contact

More questions ? please contact [Valérie Verlinden](#)