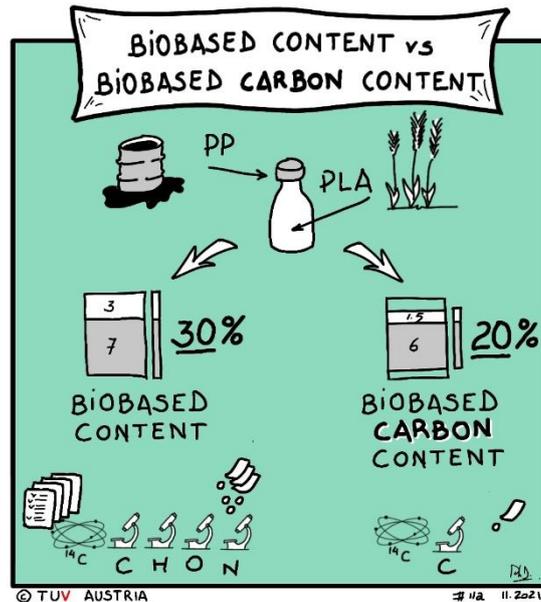


11 – biobased content vs biobased carbon content



Two concepts are used to quantify the plant-origin content of a product: the bio-based content and the bio-based carbon content.

Let's imagine a product where one part is bio-based and the other is not. The product is composed of 30% PLA (plant-origin, containing 50% carbon) and 70% polypropylene (fossil-origin, containing 86% carbon). (*)

How to measure and declare its bio-based content?

BIO-BASED CONTENT

This approach is based on the masses of four main constituents: carbon, hydrogen, oxygen and nitrogen: 30% PLA, so 30% bio-based.

The method, detailed in standard EN 16785-1, requires accurate knowledge of all the constituents and their fossil- or bio-based origin.

Easy in the illustrated case, but much more difficult for complex products, with many constituents, components, additives, from different suppliers. This method requires many measurements.

On the other hand, the certified values can be higher than those obtained by the "bio-based carbon content" approach.

BIO-BASED CARBON CONTENT

With this second approach, it is "simply" a question of determining the carbon fraction and measuring the bio-based percentage therein (via the carbon 14 method explained in sketch #15).

Based on the ASTM D6866 and EN 16640 standards, this approach is therefore less expensive and makes it possible to incorporate constituents and/or components whose origin and detailed composition is unknown: these are considered as of fossil origin.

This is also the preferred method of market surveillance authorities: no need to know the exact composition of the product to verify the claim: a simple C14 measurement can do it.

TÜV AUSTRIA can certify according to both approaches:

- "NEN biobased %" for the bio-based content
- "OK biobased" for the bio-based carbon content

(*) The choices are only made to have values that are easy to illustrate and calculate.