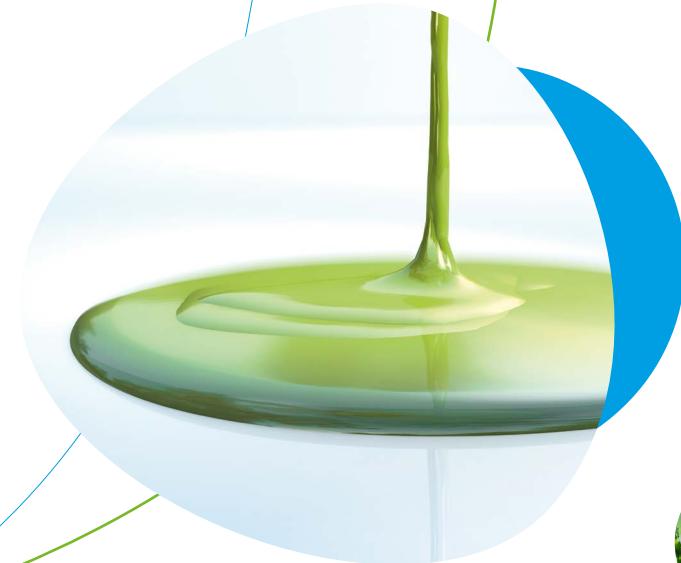


# PRODUCT GUIDE ADDITIVES FROM BIO-BASED MATERIALS

RHEOLOGY ADDITIVES

WETTING AND DISPERSING ADDITIVES

DEFOAMERS  
WAX ADDITIVES



All products in  
this brochure  
are PFAS-free.

# Introduction

Sustainability, climate neutrality, and similar topics are increasingly coming into focus worldwide. Collective awareness and new regulations, such as the European Green Deal, are demanding change not only in society but also in the chemical industry. The chemical industry is a major contributor to greenhouse gas emissions, but it also offers an important lever to contribute to a more sustainable world. One way to make the chemical industry more sustainable and climate friendly, and less based on finite resources, is the use of bio-based materials. Thanks to its intensive product and application research, BYK offers its customers a comprehensive portfolio of (partly) bio-based additives.

## Note

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# Bio-based products

## What are bio-based products?

According to the European Commission, bio-based products are “wholly or partly derived from materials of biological origin, excluding materials embedded in geological formations and/or fossilised. [...] As they are derived from renewable raw materials such as plants, bio-based products can help reduce CO<sub>2</sub> [...].”\*

## BYK's understanding

BYK's understanding is closely related to this definition. BYK takes the definition of “bio-based” given in ASTM D6866 into account as well, so that the bio-based content only refers to the organic carbon.

This means that the measurement does not include “neutral” substances that do not contain any carbon, such as water, minerals, and silicon dioxide. Furthermore, substances containing inorganic carbon are likewise excluded. The measured value should therefore be understood as the amount of bio-based organic carbon in relation to the total organic carbon (TOC).

\*Reference: [Bio-based products | Internal Market, Industry, Entrepreneurship and SMEs \(europa.eu\)](#)

# Measuring method according to ASTM D6866

The bio-based content is determined according to ASTM D6866 using the radiocarbon method. The basis of the radiocarbon method is the decay of <sup>14</sup>C isotopes to <sup>14</sup>N isotopes. <sup>14</sup>C isotopes are formed in the atmosphere and decay at a constant rate to <sup>14</sup>N isotopes. Due to the constant exchange with the environment, the ratio of <sup>14</sup>C to <sup>12</sup>C in living organisms (bio-based materials) almost

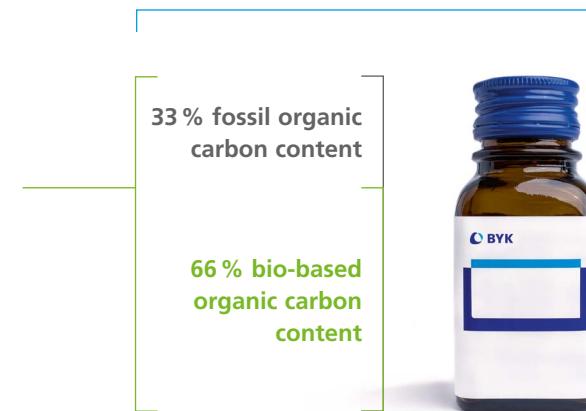
corresponds to the equilibrium in the surrounding environment. In fossil-derived materials, the decay is considerably more advanced and the <sup>14</sup>C isotope concentration considerably lower. The ASTM D6866 "Standard Test Methods for Determining the Bio-based Content of Solid, Liquid, and Gaseous Samples Using Radiocarbon Analysis" defines different ways to measure

the <sup>14</sup>C content and therefore the bio-renewable content. The method used here is "Method B – Accelerator Mass Spectrometry (AMS)" and done by an independent, accredited testing laboratory. For a better understanding, see G.01.\*

## Schematic product composition



## Results of ASTM D6866 measurement



\* The illustration is a very simplified presentation. The statement that 75 % of the product equals 100 % of the TOC is only partially correct, since other elements are excluded.

\*\* e.g. water, carbonates, silicone dioxide, minerals, etc.



## Additives from bio-based raw material

Product	Bio-based organic carbon content (%)	Product	Bio-based organic carbon content (%)	Product	Bio-based organic carbon content (%)		
<b>Wetting and dispersing additives</b>							
BYK-MAX D 4220	62	AQUACER 565	94				
DISPERBYK-108	89	AQUACER 570	91				
DISPERBYK-2157	91	AQUACER 571	92				
<b>Surface additives</b>							
BYK-S 760	91	AQUACER 581	87				
<b>Defoamers/air release additives</b>							
BYK-014	57	AQUACER 1541	94				
BYK-1693 SD	54	CERAFLOUR 960	96				
BYK-1740	100	CERAFLOUR 964	100				
BYK-1745	79	CERAFLOUR 993	96				
BYK-1748	73	CERAFLOUR 994	96				
<b>Wax additives</b>							
AQUACER 1000							
CERAFLOUR 1001							
CERAFLOUR 1002							
CERAFLOUR 1003							
CERAFLOUR 1004							
CERAFLOUR 1010							
<b>Processing additives</b>							
BYK-3950 P							
BYK-MAX P 4102							
BYK-P 9051							
BYK-P 9080							
BYK-P 9085							
SCONA TPPL 1214 PA							
SCONA TPPL 1310 PA							
<b>Viscosity depressants</b>							
VISCOBYK-5120							
<b>Rheology additives</b>							
GARAMITE-7308							
OPTIGEL-WX							
RHEOBYK-7590							
RHEOBYK-7591							
RHEOBYK-R 606							



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