



ELEMENTIS

Product brochure

RHEOLATE® BIO 5010 & RHEOLATE® BIO 5075

Biobased polyurethane thickeners for safer,
more sustainable, high-performance paints



RHEOLATE® BIO 5010 & RHEOLATE® BIO 5075

At Elementis, we already offer several biobased additives and rheology modifiers to help our customers create more sustainable paints and coatings. Now, we're expanding this range with **RHEOLATE® BIO 5010 & RHEOLATE® BIO 5075**: two biobased polyurethane non-ionic synthetic associative thickeners (NiSAT).

These new additives offer more than 90% certified biobased carbon content, eco-labeling compliance, and the high performance that modern paint formulations demand. They are suitable for architectural coating applications including finishes, wood coatings, and interior and exterior wall paints.

RHEOLATE® BIO 5010

- **92% biobased** carbon content
- Great **high-shear** contribution
- Exceptional **spatter resistance**
- **High film build**; outstanding **flow & leveling**
- Good **color acceptance** and **rub out**
- **Pourable liquid** for easy addition
- Low odor; formulated without VOCs, tin, APEOs, MIT/BIT, or TEA*

RHEOLATE® BIO 5075

- **90% biobased** carbon content
- **Low-Mid-shear** rheology modifier
- Good balance of sag **resistance** and **leveling**
- **Compatible** with all resin systems
- **Easy** to incorporate and use
- Good **storage stability**
- Low odor; formulated without VOCs, tin, APEOs, MIT/BIT, or TEA*

* Statement of product stewardship and safety data sheet available on request



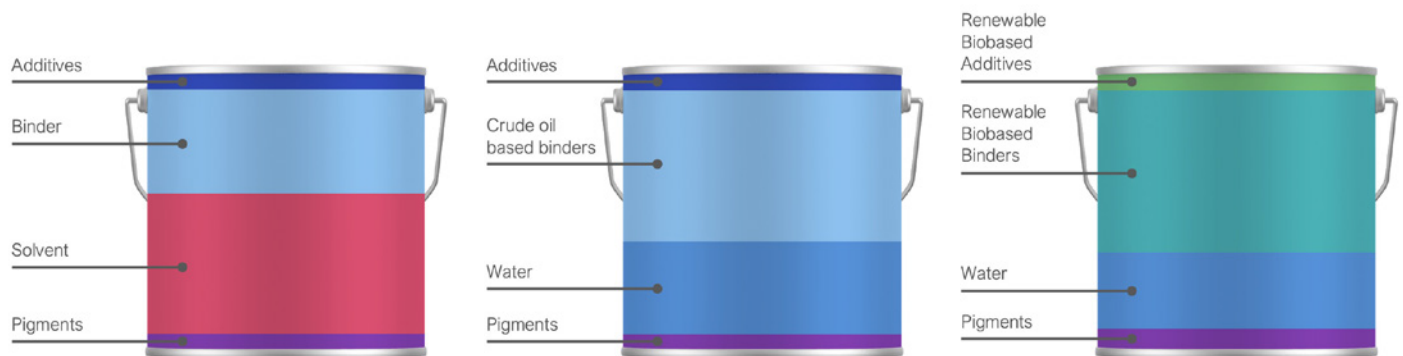
Meet the growing demand for biobased coatings

Among both professional painters and DIY consumers, safety and sustainability are increasingly top of mind when choosing architectural coatings. Environmentally friendly paints are the number-one desired innovation for painters in the EU.¹ To address these needs, meet internal safety and sustainability targets, and comply with increasingly strict external regulations, it's essential to offer alternatives to traditional petrochemical-based coatings.

Increasingly, paint manufacturers are using biobased ingredients to develop more sustainable coatings and reduce their CO₂ footprints. And consumers value these reductions: the global biobased paints and coatings market is expected to see a compound annual growth rate of around 9.4% between 2024 and 2030.²

Biobased binders are one of the most popular ways to integrate biobased carbon content into coatings. But manufacturers can also increase their coatings' biobased carbon content with biobased additives, enabling further market differentiation. Wherever you integrate biobased carbon content, it's crucial to balance it with other critical end-user needs such as price and performance.

FIGURE 1



¹ Source: *European Painter Insight Monitor 2022*, USP Consultancy, Architectural

² Source: *Global Bio-based Paints and Coatings Market Research Report: Forecast (2024-2030)*, MarkNtel

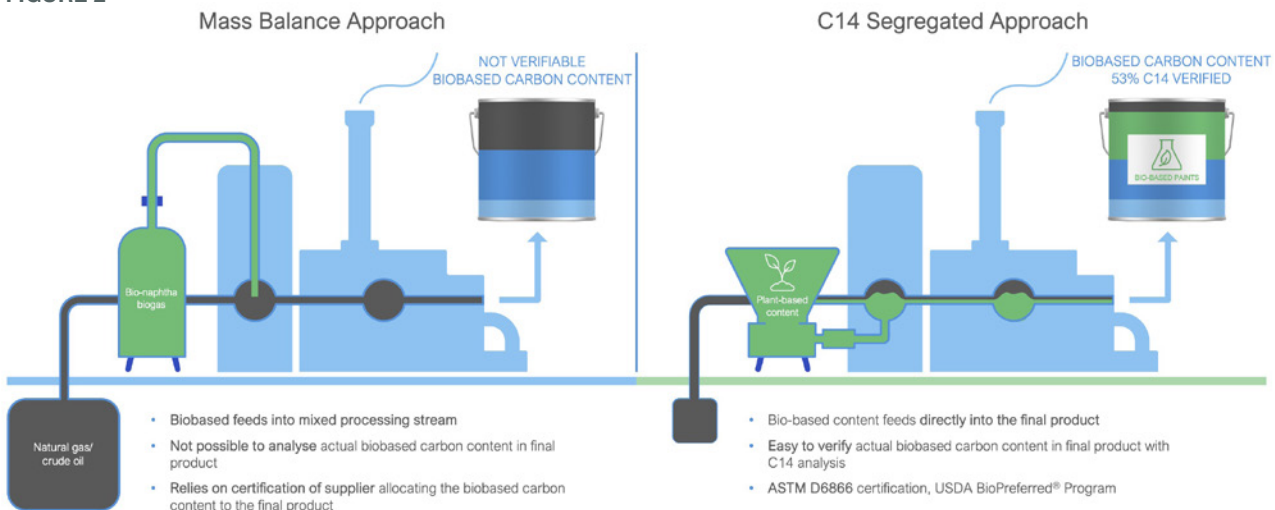


Easily build in biobased carbon content

RHEOLATE® BIO 5010 & RHEOLATE® BIO 5075 both contain more than 90% C14 biobased carbon content (verified and certified by third parties in compliance with ASTM D6866-22). This enables you to increase your formulations' biobased carbon content and appeal to environmentally conscious end-users.

The biobased carbon content in RHEOLATE® BIO 5010 & RHEOLATE® BIO 5075 consists largely of bio-ethanol from sugarcane molasses waste streams (as per the ISCC Plus definition of waste and residue). As such, this content does not compete with food supply. A statement of product stewardship, based on a valuechain analysis, is available for both products.

FIGURE 2



Ensure eco-labeling compliance

Along with the proportion of biobased carbon content, painters and end-users increasingly consider eco-labels when choosing paints. RHEOLATE® BIO 5010 & RHEOLATE® BIO 5075 can help you to qualify for these eco-labels, demonstrating your commitment to environmental responsibility and consumer safety.

Both additives qualify for the EU Ecolabel, and RHEOLATE® BIO 5075 also qualifies for the Nordic Swan and French NF Environment labels. A statement of product stewardship is available for both products. Both RHEOLATE® BIO 5010 & RHEOLATE® BIO 5075 have low odor and are formulated without VOCs, tin, APEOs, MIT/BIT, or TEA.* So you and your customers and end-users can be confident in safer, less toxic paints and coatings.

* Statement of product stewardship and safety data sheet available on request

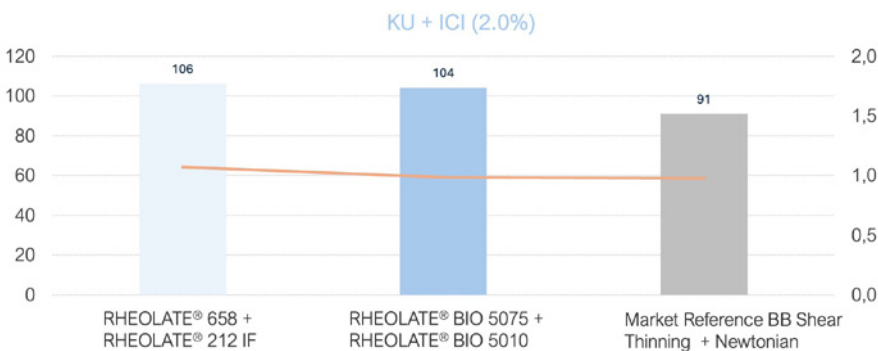
Trust in versatile performance

While safety and sustainability are increasingly important, we know that this means nothing if products can't also offer the performance standards that consumers and end-users expect. With RHEOLATE® BIO 5010 & RHEOLATE® BIO 5075, you can trust in the same high performance you're used to and even higher in some formulations.

Our Elementis scientists have demonstrated this performance by testing both RHEOLATE® BIO 5010 & RHEOLATE® BIO 5075 against benchmark non-biobased NiSAT products. As well as demonstrating strong performance, these tests also showed the versatility of RHEOLATE® BIO 5010 & RHEOLATE® BIO 5075. Both additives showed strong performance in a wide range of paint formulations with various binder chemistries including acrylic, styrene acrylic, vinyl acetate ethylene (VAE), Vina/VeoVa, and polyurethane dispersion (PUD) systems and PVC levels.

FIGURE 3: RHEOLATE® Biobased NiSAT 15% more KU builder capacity than biobased market reference

Thickener	Loading %	Thickener	Loading %	KU Units	ICI Poise	Brookfield (mPa), S04 20 rpm	Brookfield (mPa), S04 50 rpm
RHEOLATE® 658	0.66	RHEOLATE® 212 IF	2.0	106	1,1	3200	2768
RHEOLATE® BIO 5075	0.66	RHEOLATE® BIO 5010	2.0	104	1,0	3100	2608
Market reference Shear Thinning	0.66	Market reference Newtonian	2.0	91	1,0	1560	1336



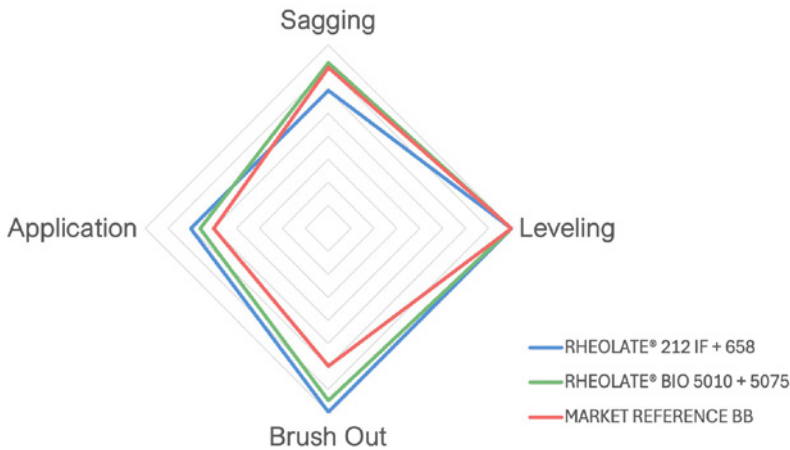
RHEOLATE® Biobased NiSAT are offering similar effectivity as conventional counterparts. However it has shown 15% higher KU efficiency than the biobased market reference.

TABLE 2: Overview test results

RHEOLATE® BIO 5010						
	PU Alkyd gloss	AC PVC 30	EP50	VAE PVC 50	VinaVeova PVC 50	AC PVC 50
Rheology	Similar	Similar	Similar	Similar	Similar	Similar
Application	Similar	Similar	Similar	Similar	Similar	Similar
Rheology Aged	Similar	Similar	Similar	Similar	Similar	Similar
RHEOLATE® BIO 5075						
	PU Alkyd gloss	AC PVC 30	EP50	VAE PVC 50	VinaVeova PVC 50	AC PVC 50
Rheology	-	Similar	Similar	Similar	Similar	Similar
Application	-	Similar	Similar	Similar	Similar	Similar
Rheology Aged	-	Similar	Similar	Similar	Similar	Similar
RHEOLATE® BIO 5010 + RHEOLATE® BIO 5075						
	EP50					
Rheology	Similar					
Application	Similar					
Rheology Aged	Similar					

Biobased NiSAT are meeting the requirements of all tested paint systems vs. conventional NiSAT.

FIGURE 4: RHEOLATE® Biobased NiSAT - 2.0% loading Newtonian, 0.6% loading Pseudoplastic



Part of a growing range of biobased products

To meet the health and environmental friendly needs of coatings manufacturers and end users, biobased additives offer another effective way to increase biobased carbon content in coatings. That’s why we are committed to continuously innovating biobased products and expanding Elementis biobased portfolio.

We’ve invested in developing biobased additives (see **FIGURE 5**), and RHEOLATE® BIO 5010 and RHEOLATE® BIO 5075 are just two of the products in our portfolio which containing at least 90% biobased carbon content. Building on our current portfolio, we look forward to developing more products like these in partnership with you.

With the paint market currently in a quieter period, innovation will be key to creating even more market-led, customized solutions. Supported by our agile way of working and access to unique market insights, Elementis can act as a sparring partner to help shape your innovation pipeline.

FIGURE 5

Renewable Biobased Additives, biobased carbon content.	
• DAPRO® BIO 9910	96%
• BENTONE® SD1	26%
• NUOSPERSE® 2000	40%
• NUOSPERSE® FN 260	40%
• DAPRO® DF 513/514	78%
NEW RHEOLATE Biobased NiSAT	> 90%

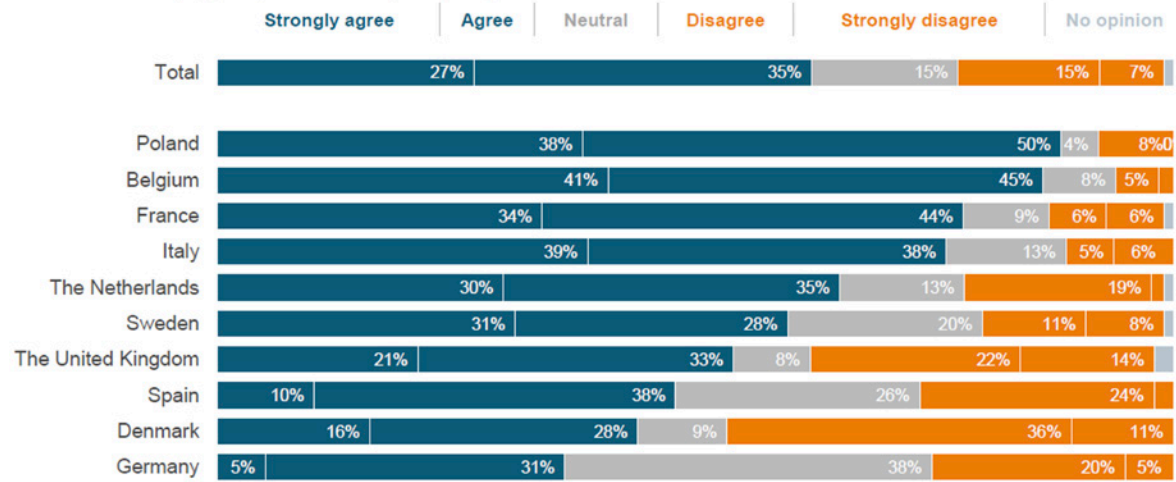


APPENDIX

Extra background information

FIGURE 6: Importance of sustainability for the painters

Statement: When buying paint, the sustainability of a paint product is a decisive reason



Source: USP Painter Insight Monitor 2023

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October 2024

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Unique chemistry,
sustainable solutions