From Bio-Based to Low-Carbon

Performing Polymer Solutions for Sustainable Coatings

CERESANA – Webinar Future Of Biochemicals

November 12, 2026



ecoat

RESPECT THE FUTURE

SUSTAINABLE & PERFORMING

Ibrahima FAYE

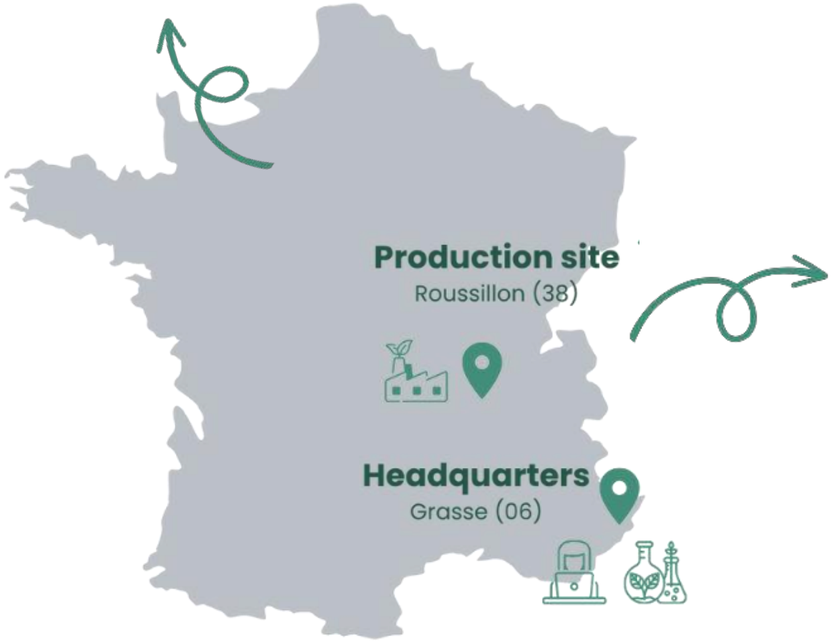
Business Manager
New Business Development Manager

Ecoat, a French industrial scale-up

- Founded in **2011** & focusing on green chemistry
- **Designing**, **producing** and **marketing** of low carbon polymers for coatings
- **ESG-focused** and committed to **Responsible Care®**

BRONZE | Top 35%
ecovadis
Sustainability Rating
NOV 2025

Responsible Care®
OUR COMMITMENT TO SUSTAINABILITY



- Since **2014** on OSIRIS, the first French **chemical platform**
  (shared with 15+ companies like BASF, Sequens, Elkem, etc.)
- 3000 m² ECOAT own building
- 10 000 MT capacity with expansion plans













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A deep-tech company built on collaborative innovation

- ✓ Two **Pierre Potier awards** for innovation in sustainable chemistry
- ✓ Several **collaborative programs** (INRAE, CNRS, ITECH)
- ✓ Supported by **ADEME** agency
- ✓ **European Innovative Council** (EIC) Horizon 2020 SME grant
- ✓ On going **France 2030 program** on « biosourced products and industrial biotechnologies »
- ✓ **5 fund raisings**
- ✓ Active member of **B4C / ACDV** leading network in the bioeconomy sector



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Serving customers worldwide



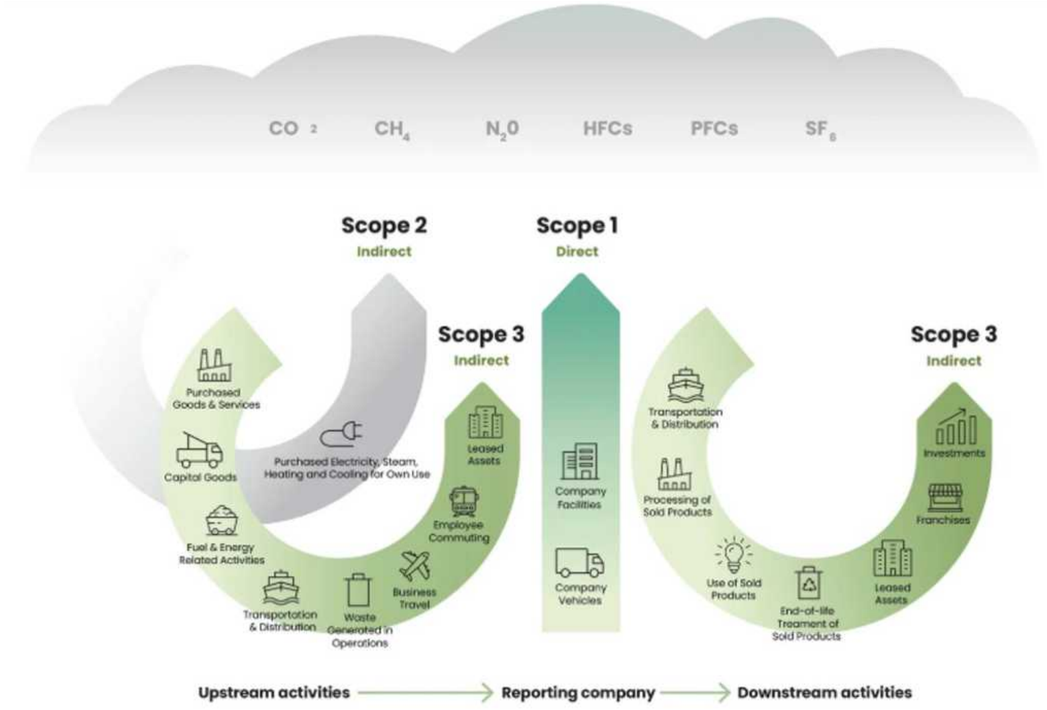


- with Ecoat's **own sales force**
- and a strong network of **local distributors.**

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Moving towards sustainability through Green-House Gas (GHG) emission targets

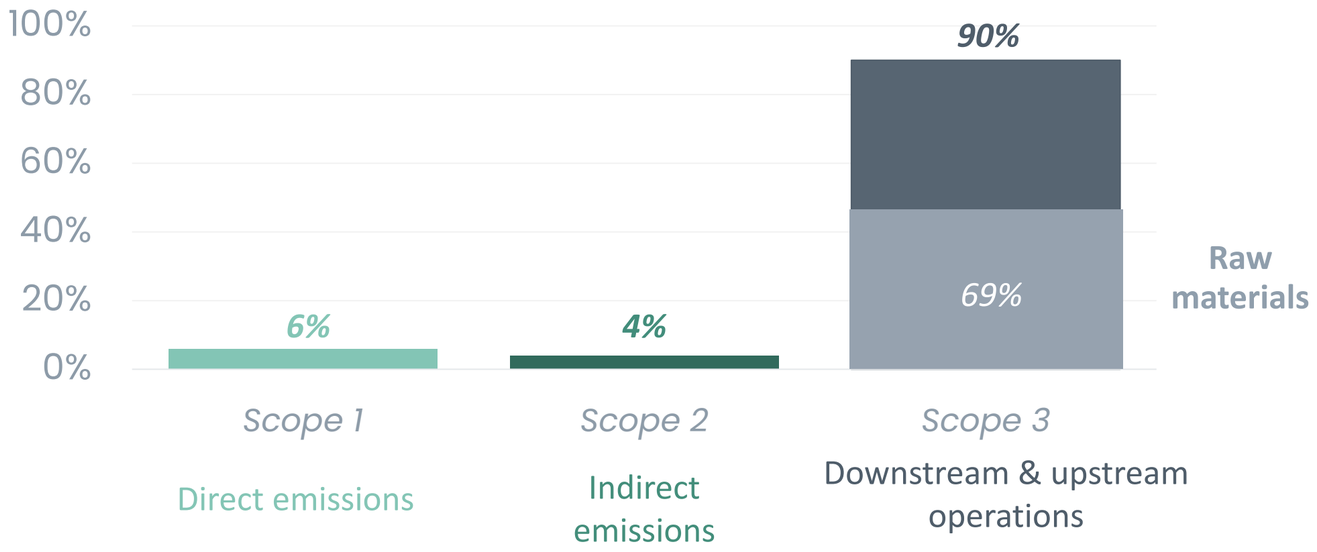
Scopes of Green House Gas (GHS) emissions



SCIENCE BASED TARGETS

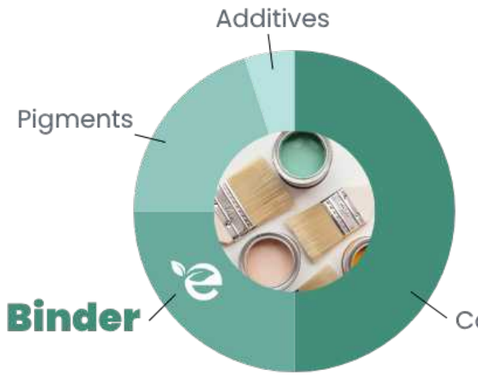
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

to meet the Paris Agreement :
-90% of GHG emissions by 2050 or -4,2%/year



Average GHG emissions based on several sustainability reports of paint manufacturers

The journey to lower raw materials impact



SOLVENT-BASED

WATER REDUCIBLE

WATER-BASED, PETRO-SOURCED

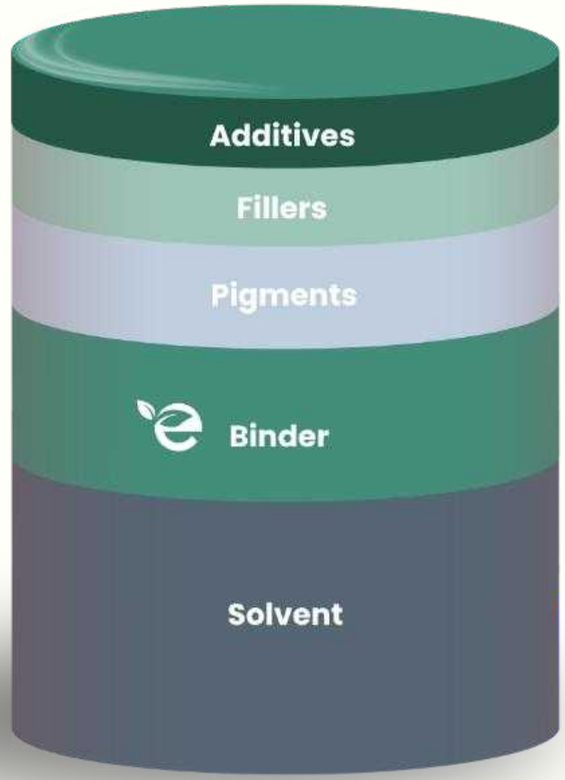
Gradual transition through blending

LOW CARBON FOOTPRINT COATINGS

Lower VOC content

Lower carbon footprint

Polymers (“binders”) are a key component of coatings formulations



	Main role	Water-based paints	Solvent-based paints
Additives (5%)	*Modify paint properties (thickeners, antifoams, preservatives, etc.).*	*More additives needed*	
Pigments & Fillers (25%)	*Provide optical properties (color, opacity) and influence physical characteristics (thickness, hardness, water resistance, etc.).*	*TiO2, organic and inorganic pigments Calcium carbonate, talc, mica…*	
Binder *(also called resin) (30%)*	*Brings components together to form a cohesive film, ensures adhesion to the substrate, determines key properties (drying, UV and chemical resistance, hardness, flexibility…etc)*	*Emulsion or dispersions or water-reducible resins*	*Resins diluted in solvent(s)*
Solvent (40%)	*Gives the paint fluidity to ease application*	*Water*	*White Spirit, Butyl acetate, Xylene…*

Ecoat's binders to replace petro-sourced binders in paints

Basic chemistry
distillation

Fine chemistry
polymerization

Formulation
Manufacture of Paints and Coatings

End markets
Applications

Petro-sourced

Fossil-based monomers





Petro-based binders



Bio-sourced



Plant-based building blocks



ECOAT's bio-based binders











ARCHITECTURAL APPLICATION



SECOIA® 1400: ultra-low carbon footprint binder for premium interior wall paints



Contains **98% of bio-based** raw material (EN 16640)

Solvent free binder (50% in water)

Compliant with environmental **labels**

Better leveling and **longer open time** than acrylics

One of the **lowest carbon footprint binder** of the market

113% Carbon Footprint saved per kg** CO_2

compared to a standard **petro-sourced styrene-acrylic**

Validated in May 2022
Validation ID:

CDA022

Verifiable at

ecoat

Mitigates climate change with an impact reduction potential vs. standard styrene acrylic of:

-1,7 kg CO_2 eq Per kg of product substituted

Carbon footprint (including biogenic carbon) of Secoia® 1400 validated during European Innovation Council EIC-EIT Climate race to net-0 program

*Based on C14 content measured according to EN 16640

** LCA study carried out internally using SimaPro v9.5 software and IPCC2021 GWP100 method with inclusion of the CO_2 storage effect of biogenic carbon

Cradle to manufacturer gate study - product without packaging (commercial form)

Secoia® 1400 : model made using Ecoinvent v3.8 cut-off database and supplier data. Values given in good faith according to current Ecoat know-how - June 2024 assessment

© Ecoat 2026

SECOIA® 1400 used as sole binder in a white high-performance matt paint

Eco-designed paint

PAINT COMPOSITION	
Dry binder content	15.5 %
TiO2 content	22.0 %
PAINT CHARACTERISTICS	
Solid content in weight	60.5 %
PVC	48 %
Density	1,45

Binder used in the paint formulation	Paint calculated bio-based content (ISO 16640)	Paint calculated VOC (g/L)	Paint calculated sVOC (g/L)	Paint wet-scrub resistance (EN ISO 11998)	Paint gloss @ 60° / 85° (GU)
SECOIA® 1400	**Min. 82.0 %**	< 1g/L	< 1g/L	**3 µm (class 1)**	3 / 2
Styrene acrylic (SA)	Min. 0.6%	< 1g/L	**23g/L**	3 µm (class 1)	3 / 2
Vinyl acrylic (VA)	Min. 0.8%	< 1g/L	< 1g/L	**6 µm (class 2)**	3 / 3
Vinyl acetate ethylene (VAE)	Min. 0.8%	< 1g/L	< 1g/L	**6 µm (class 2)**	3 / 2



With **SECOIA®1400** used as sole binder :

- ✓ **VERY HIGH BIO-BASED CONTENT > 82%**
- ✓ **LOW VOC AND sVOC CONTENT < 1 g/l**
- ✓ **HIGH WASHABILITY : CLASS 1 WET SCRUB**
- ✓ **BETTER LEVELING & NICE MATT APPEARANCE**

With SECOIA® 1400 no coalescing agent needed

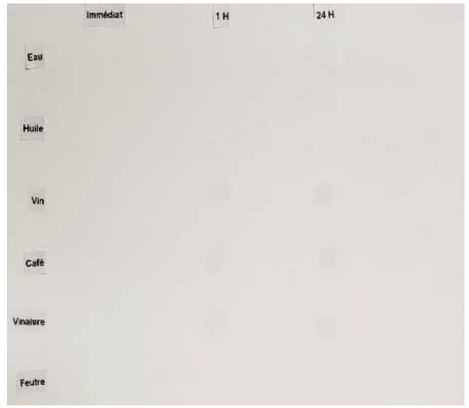
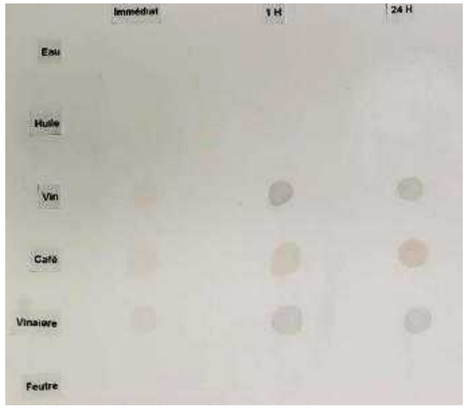
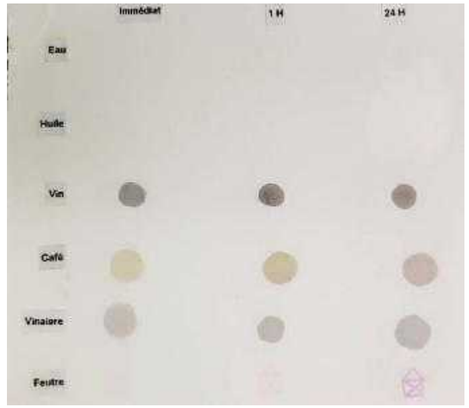
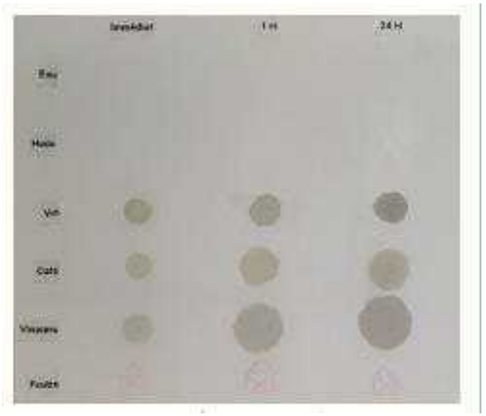
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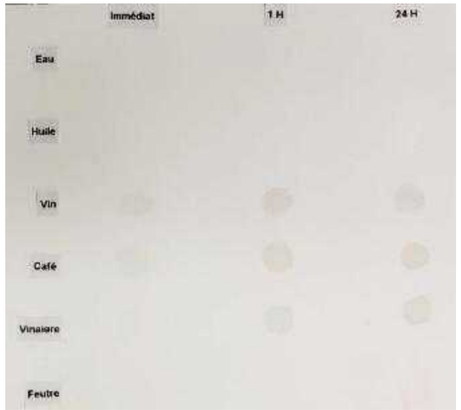
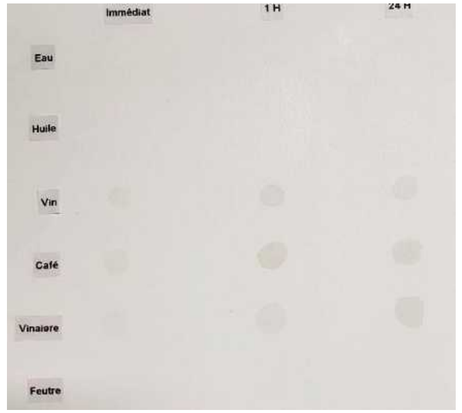
Low VOC and low indoor air emissions



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SECOIA® 1400 : easy clean paint with superior stain resistance

SECOIA® 1400	Styrene acrylic (SA)	Vinyl-Acrylic (VA)	Vinyl-Acetate Ethylene (VAE)
			
Rating : **14**	Rating : **41**	Rating : **46**	Rating : **46**

Market Paint 1	Market Paint 2
	
Rating : **36**	Rating : **33**

REFERENCE	TYPE
Market Paint 1	Matt paint based on Styrene Acrylic binder
Market Paint 2	

With **SECOIA® 1400 :**

- ✓ Far better stain resistance vs petro-sourced binders in the same eco-designed white high performance matt formulation (PVC : 48%)
- ✓ And better results vs commercial benchmarks

© Ecoat 2026

Up to 34% CO_2 reduction when using SECOIA® 1400 as sole binder in white matt paint

Functional unit: 1 kg of paint.

Comparative LCA carried out with **Simapro v9.5/ IPCC 2021 method GWP100, taking into account the CO_2 storage effect of biogenic carbon at the gate.**

Cradle to gate study – manufacturing supposed in Grasse - product without packaging.

Production process data based on Decorative Paint PEFCR scenario.

Secoia® 1400: binder modelized cradle to ECOAT's gate without the packaging using Ecoinvent database v3.8 cut-off and supplier data (June 2024 Assessment).

Styrene Acrylic and VAE binders: models from EPDLA LCA study (European Polymer Dispersion & Latex Association).

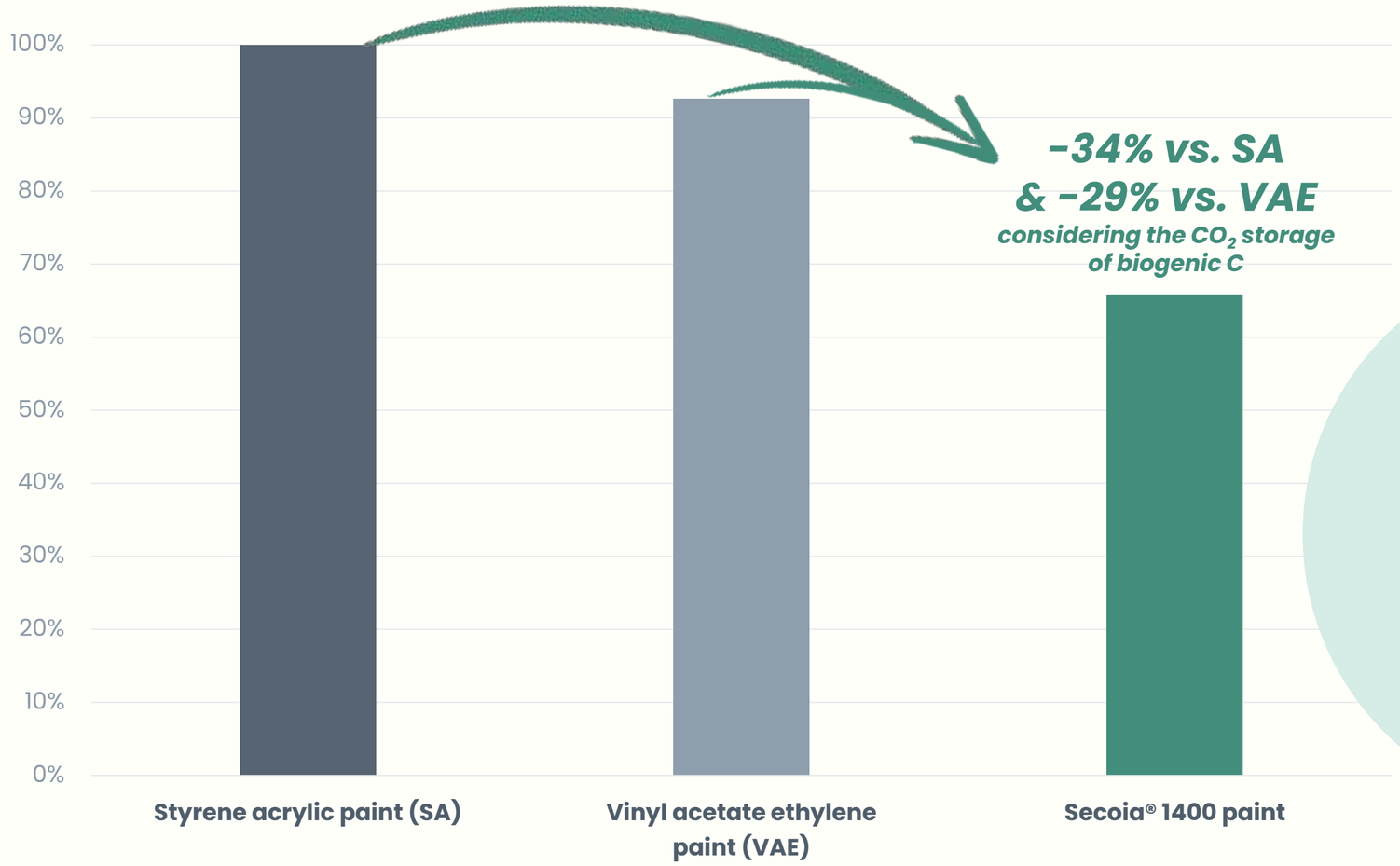
Paint raw materials: models from Ecoinvent database v3.8 cut-off and CEPE database (European Council of the Paint, Printing Ink, and Artist's Colours Industry).

Please consult us for more information

Climate change impact of paints

Petrobased references vs **Secoia® 1400**

Cradle to gate - IPCC 2021 GWP100 method + CO_2 storage effect of biogenic carbon





-34 % ?



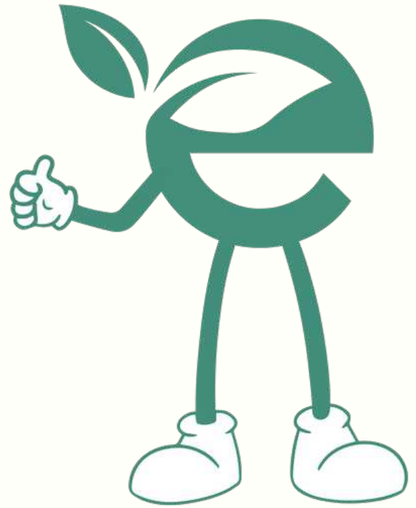
70

single trips

FOR 100 T OF PAINT



METAL APPLICATION



Replacing solvent-based by water-based metal coatings thanks to INOKEM®UR 3309



*%biobased calculated according to EN 16640

INOKEM® UR 3309 MAIN CHARACTERISTICS AND BENEFITS

- Highly hydrophobic polymer
- Excellent barrier effect
- Good weathering resistance & gloss retention
- Good adhesion on ferrous and non ferrous metals
- Lower CO_2 emissions vs PUD and acrylic emulsions



Climate change impact vs references at the gate

Details of the study:
LCA study carried out internally using SimaPro v9.5 software and IPCC2021 GWP100 method with inclusion of the CO2 storage effect of biogenic carbon
Cradle to manufacturer gate study - product without packaging (commercial form)
Inokem® UR 3309 : model made using Ecoinvent v3.8 cut-off database and supplier specific data.
Values given in good faith according to current Ecoat know-how - May 2025 assessment
Petrobased references : LCA study results of the European Polymer Dispersions and Latex Association (EPDLA) made by PricewaterhouseCoopers

©Ecoat

INOKEM® UR 3309: similar salt spray performance than solvent-based Direct To Metal paints

Reference	Thickness	100 hours	300 hours	500 hours	Delamination
INOKEM® UR 3309 Polyurethane alkyd	**84 µm**				
Water-based competitor 1 Acrylic	84 µm				
Water-based competitor 2 Acrylic	85 µm				
Solvent-based competitor 3 Alkyd	**100 µm**				
Solvent-based competitor 1 Long oil alkyd	**102 µm**				

Salt Spray Test:
ISO 9227 & ISO 12944-6

.....at far lower VOC and with 41% biobased content ; and far better SST than water-based paints of the market.

	Paint with INOKEM® UR 3309 (*)	Competitor paint 1	Competitor paint 2	Competitor Paint 3	Competitor paint 4
Type	Water-based	Water-based	Water-based	Solvent-based	Solvent-based
Binder chemistry	PU-alkyd	Acrylic	Acrylic	Alkyd	Long oil alkyd
% biobased	**41%**	**<1**	**<1**	Low	Low
Gloss @ 60°	63	60	33	68	33
VOC (g/L)	**34**	65	50	**499**	**500**

(*) DTM paint : glossy white paint (PVC = 21%) with 5% anticorrosive pigment
Biobased content according to ISO 16640
VOC content according to ISO 11890-2

©Ecoat

INOKEM® UR 3309 in C3 /C4 DTM paints without anti-corrosive pigments

Reference	100 hours	200 hours	300 hours	400 hours	500 hours	Delamination
INOKEM® UR 3309 PU alkyd **WITH 5% anti-corrosion pigments**						Blistering on the scribe : 2(S3)  Adhesion 0/1 Rusting Ri0
INOKEM® UR 3309 PU alkyd **WITHOUT anti-corrosion pigments**						Blistering on the scribe : 2(S4)  Adhesion 0/1 Rusting Ri0

Reference	100 hours	200 hours	300 hours	400 hours	500 hours	Delamination
INOKEM® UR 3309 PU alkyd **WITHOUT anti-corrosion pigments**			 Blistering 2(S2)	 Blistering 4(S4)	 Blistering 4(S4)	  Adhesion 2 Rusting Ri0

300 to 400h Salt Spray resistance **without** anti-corrosive pigments :

- No safety labels
- Lower costs

Salt Spray Test:
ISO 9227 & ISO 12944-6

Adhesion: ISO 2409
Blistering: ISO 4628-2
Rusting: ISO 4628-3

©Ecoat



WOOD APPLICATION



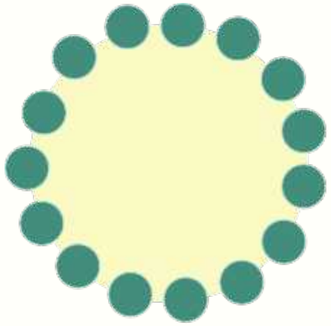
Focus on SECOIA® 4487 innovative solution based on patented Picketing technology

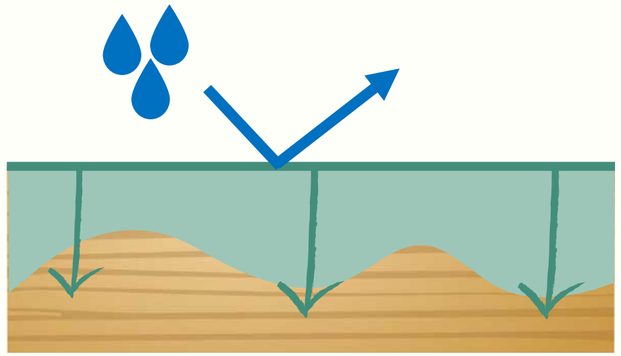
A waterborne alkyd binder for wood impregnation



SECOIA® 4487

- Unique surfactant-free technology
- Designed for non-film forming wood coating & hydrophobicity
- Nourishes wood while maintaining its natural appearance
- Gives an important beading effect
- Reduces the carbon footprint





Deck, cladding, etc.
Pine, exotic wood, etc.

Wood penetration protects wood from weathering degradation

**Based on C content measured according to EN 16640*

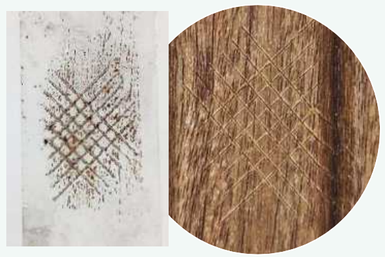
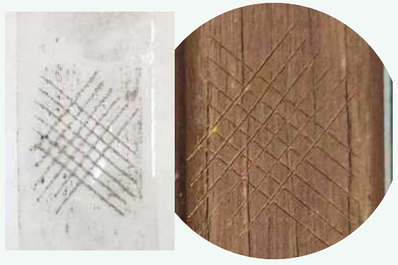
SECOIA® 4487 for easy maintenance waterborne decking oil

NATURAL WEATHERING

TEAK DECKING OIL BASED ON SECOIA® 4487 VS. ACRYLIC BENCHMARK.



1 YEAR of exposure (March 2024 to February 2025) – SOUTH OF FRANCE

	BENCHMARK	SECOIA® 4487
Left : pine wood Right : exotic wood		
Knots on pine wood		
Cross-cut test (ISO 2409) after restoration (1 layer) on exotic wood		

With SECOIA® 4487 :

- ✓ Does not peel, no cracking & keeps homogeneity
- ✓ Protects knots from cracking
- ✓ Preserves adhesion & facilitates restoration

SECOIA® 4487 **SB decking oil**



Ipe wood
After 7 months of natural exposure



©Ecoat

SECOIA® 4487 for low carbon footprint decking oil

Functional unit: 1 kg of decking oil.

Comparative LCA carried out with **Simapro v9.5/ IPCC 2021 method GWP100, taking into account the CO_2 storage effect of biogenic carbon at the gate.**

Cradle to gate study – manufacturing supposed in Grasse - product without packaging.

Production process data based on Decorative Paint PEFCR scenario.

Secoia® 4487: binder modelized cradle to ECOAT's gate without the packaging using Ecoinvent database v3.8 cut-off and supplier specific data (June 2024 Assessment).

Solvent based alkyd: binder modelized cradle to ECOAT's gate without the packaging using Ecoinvent database v3.8 cut-off (August 2024 Assessment).

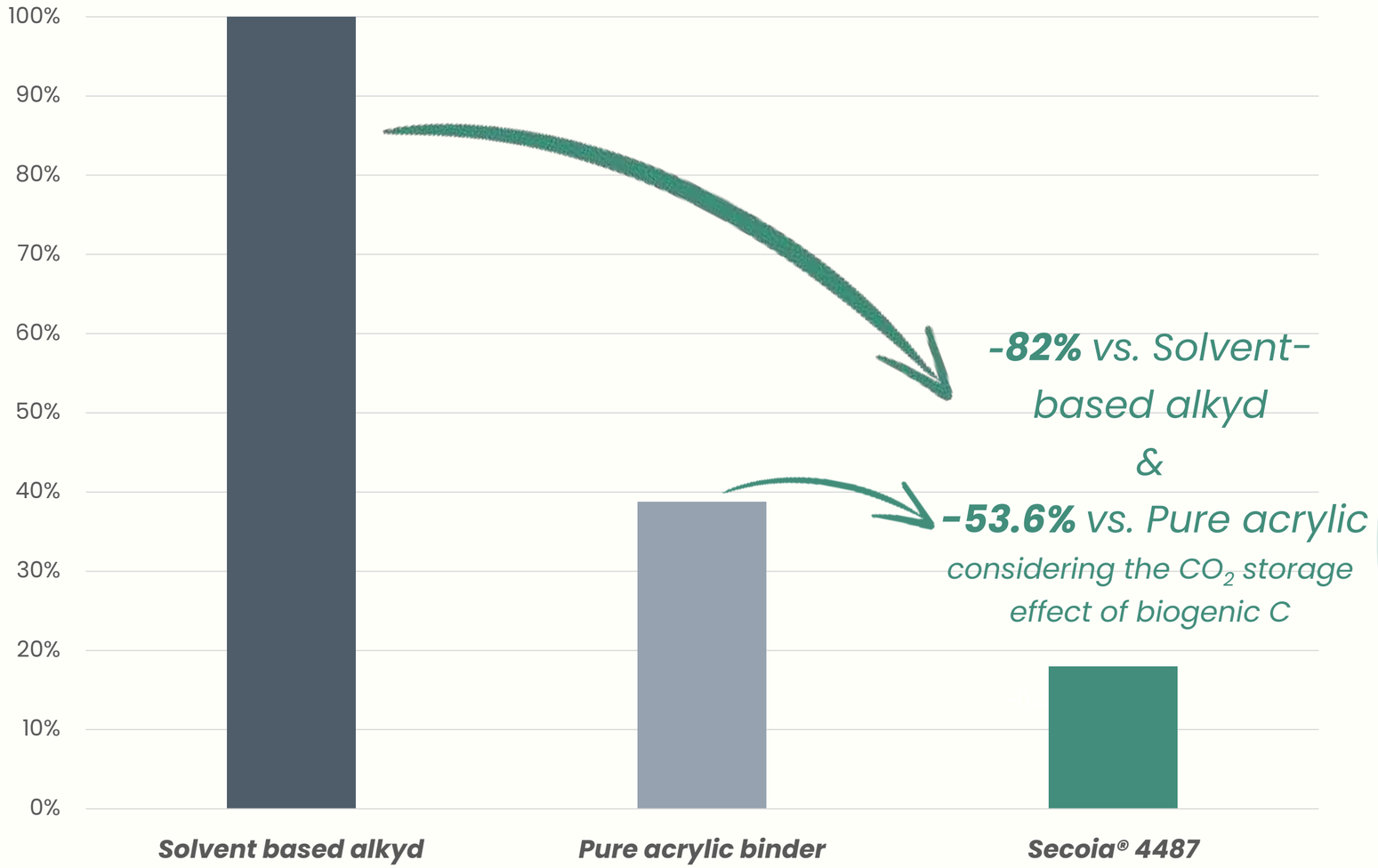
Pure Acrylic binder: model from EPDLA LCA study (European Polymer Dispersion & Latex Association).

Paint raw materials: models from Ecoinvent database v3.8 cut-off and CEPE database (European Council of the Paint, Printing Ink, and Artist's Colours Industry).

Please consult us for more information

Climate change impact of clear decking oils
Secoia® 4487 vs. references

Cradle to gate - IPCC 2021 GWP100 method + CO_2 storage effect of biogenic carbon





-53 % to -82 % ?



45 to 176
single trips

FOR 100 T OF PAINT

ECOAT's polymers : other potential applications

- **Plaster:** Improved adhesion and durability of coatings
- **Stone Protection:** Enhanced hydrophobicity, natural color and durability
- **Non-woven:** Providing mechanical strength and flexibility
- **Adhesives:** Sustainable solutions for wood and paper
- **Packaging:** Partial replacement of fossil-based binders in non-food packaging

Competitive Advantages

- Technical performance comparable to conventional binders
- Reduced carbon footprint
- Increased biobased content
- Alignment with stricter environmental regulations

CONCLUSION



BINDERS

LOW VOC

PERFORMING

LOW CARBON FOOTPRINT

WATERBASED

VERSATILE

BIOBASED

REDUCTION OF CARBON FOOTPRINT

Technical presentations are available

Q&A SESSION

READY TO ENTER THE ECOLOGICAL TRANSITION?

Contact us to discuss your project and find the solution to your needs!

ecoat

RESPECT THE FUTURE

IBRAHIMA.FAYE@ECOAT.FR

