ECOWISE™ CHOICE

Resins for Buildings and Decorative Applications

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The operating allnex group is legally owned by Allnex Holdings S.à r.l., a company based in Luxembourg, which also provides long term strategic decisions relating to its investment in allnex.

www.allnex.com

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The Coating Resins Company

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EMEA-0921

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Facts & Figures

- Global company with over €2.1 billion in sales
- Broad technology portfolio: liquid coating resins, energy curable resins, powder coating resins, crosslinkers and additives, composites and construction materials
- Approximately 4000 employees
- Customers in more than 100 countries
- 34 manufacturing facilities
- 23 research and technology centers
- 4 joint ventures
- Extensive range of solutions for key coating segments: automotive, industrial, packaging coating and inks, protective, industrial plastics and specialty architectural

With manufacturing, R&D and technical facilities located throughout Europe, North America, Asia Pacific and Latin America, allnex offers global and reliable supply of resins and additives combined with local, responsive customer support.

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BE ECOWISE™ TOGETHER

As the leading industrial coating resins company, sustainability is a key part of our continued success and a commitment to our stakeholders. While we have been continuously and consciously working on green technologies, sustainability challenges the industry is facing are now more than ever before, requiring robust tools and methodologies to address customers and societal needs.

Our ECOWISE CHOICE portfolio is the answer to the need for measurable sustainability performance assessments, in a specific market and application context and is especially designed to deliver the greatest combined value for our customers, the society and the environment. It is a testament to our pledge to pursue a more sustainable future with our stakeholders – to be ECOWISE together.

Our ECOWISE CHOICE selection is the outcome of applying best practices of Sustainable Portfolio Management (SPM) to our business. Through the SPM we aim to categorize our products by analysing their sustainable benefits and challenges, using a fact-based methodology. The SPM measures how well our products score according our 5 sustainability pillars, reference products in the market and/or the most stringent industry standards. Products that bring only positive contributions will get the ECOWISE label, a label that assures our customers they use among the best possible sustainable solutions that are available on their market.

Our ECOWISE CHOICE portfolio is a selection of products that meet the most stringent standards across the value chain of the selected application.

“Sustainable portfolio management is the keystone of our sustainability program. It enables us to steer our product offering and innovation pipeline in line with the sustainability needs of the market. It will enable us to support our customers, end-markets, and stakeholders” – Benoit de Becker, VP Strategy and Innovation.

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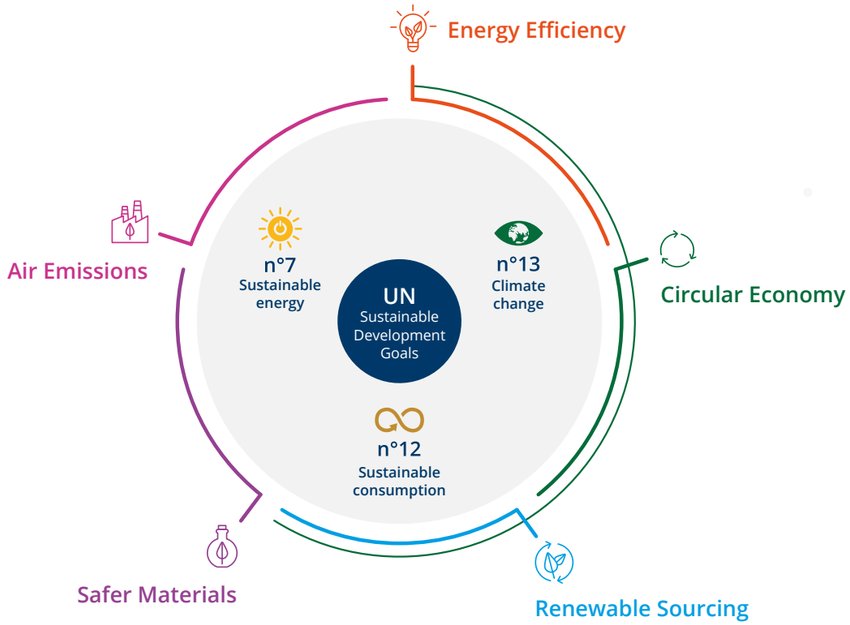
SUSTAINABILITY PILLARS

5 High priority areas are the basis for the allnex sustainabillity program



Energy Efficiency

We design our product and manufacturing process to achieve the highest efficiency in energy utilization across the product lifecycle.

Circular Economy

We explore options to limit resources consumption, keep them in use as long as possible, and finally recover and recycle them at the end of service life.

Renewable Sourcing

We aim at minimal use of finite resources and reduce the impact on climate change by looking at renewable alternatives for raw materials and energy we use.

Safer Materials

We are committed to making the substitution of potentially harmful chemicals with safer options one of our top priorities.

Air Emissions

We focus on reducing emissions of Volatile Organic Solvents across the product lifecycle to protect people and the environment.

ECOWISE™ CHOICE

Meeting the sustainability needs of building and decorative coatings market

Buildings are at the forefront of the climate action discussion. In addition to contributing around 40% of global energy and carbon dioxide related emissions, the built environment affects both the urban heat island effect and indoor air quality.

Increasingly, architects, property owners, fabricators and other industry players are looking to green building certifications such as LEED and BREEAM as an effective means to address the industry's impact on climate change and at the same time, create sustainable communities. Although paints and coatings represent a very small fraction of building materials, the impact they have in making a building sustainable is significant.

As a leading coating resins company, allnex continues to develop green technologies such as water borne, UV curable, powders and formaldehyde-free crosslinking solutions that improve indoor air quality, make our living spaces healthier and extend the longevity of buildings.

Our ECOWISE CHOICE portfolio for buildings and decorative applications comprises solutions for broad walls, metal facades, architectural extrusions, trim, joinery and flooring, that meet the most stringent industry standards. The portfolio is designed to support our customers in fulfilling the requirements of LEED, BREEAM, IKEA of Sweden Material specification and the underlying eco labels such as UL GREENGUARD and Nordic Swan. Including low and zero VOC products, offering improved durability and weatherability, better aesthetic appeal at low temperature cure and in fast drying coatings, our portfolio is a premium offering based on the principles of sustainability and performance. Furthermore, the increased interest on the use of sustainable raw materials, as well as resins with renewable or recycled content, is central to the ECOWISE CHOICE selection criteria.

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Technical Features

ECOWISE™ CHOICE is a living selection following evolution of our product offering and changing benchmarks and markets needs. Please always refer to allnex.com for the latest ECOWISE CHOICE product list.

Amino Crosslinkers

Product name	Type	Non volatile content- 45min- 45°C (%)	Solvent	Dyn. Viscosity 23°C (mPa.s)	Density 23°C (kg/m³) approx.	Water solubility	Xylene solubility	Comments
CYMEL® NF 3030	Formaldehyde free, waterbased crosslinker	40-45 (3)	Water	<300	1170	Soluble	Insoluble	Heat cure primer, back coat for metal facades, industrial wood coatings.

Powder

Product name	Type	Ratio	AV	Viscosity* 200°C (mPa.s)	Tg (°C)	Cure T (°C)	Technical features
CRYLCOAT® 2666-3	HAA architectural class 1 resin	95/5	30	3700	58	180	Tribo HAA resin with excellent weathering and very good flow. Improved blanching resistance. Overbake and gas oven resistance.
CRYLCOAT 2678-3	HAA architectural class 1 resin	96.5/3.5	22	4800	56	180	Low HAA demand resin with good flow, excellent outdoor durability, yellowing resistance and high degassing limits. Overbake and gas oven resistance.
CRYLCOAT 2696-6	HAA industrial	95/5	37	4000	60	160	Low bake bloom resistant HAA tribo resin for Industrial applications. Overbake and gas oven resistant.
CRYLCOAT 4420-0	HAA architectural class 2 resin	90/10	51	5500	64	200	Resin for matte dry blend superdurable systems in combination with CRYLCOAT 4641-0.
CRYLCOAT 4641-0	HAA architectural class 2 resin	97/3	20	4500	60	200	Resin for matte dry blend superdurable systems in combination with CRYLCOAT 4420-0.
CRYLCOAT 4642-3	HAA architectural class 2 resin	95/5	35	1900	62	180	High reactive superdurable.
CRYLCOAT 4655-2	HAA architectural class 2 resin	95/5	31	7500	66	160	Fast curing superdurable. Can replace up to 30% of low bake standard durable HAA resins to improve blooming resistance, outdoor durability and reactivity.
CRYLCOAT 4659-0	HAA architectural class 2 resin	95/5	33	3700	59	190	Superdurable resin for use with HAA or TGIC, with outstanding flow and bloom resistance.

* Melt viscosity measured with Brookfield 1 viscometer

Waterborne

Product name	Type	Self- crosslinking	Non volatile %	pH	MFFT (°C)	Technical features
SETAQUA® 6716	Acrylic dispersion, surfactant free	●	40%	8.5	20	Excellent hardness and blocking resistance, fast drying, good sandability and chemical resistance. Excellent in-can clarity and solvent-like appearance in the dry coat. Good colour stability.
SETAQUA 6756	Acrylic dispersion, surfactant free	●	40%	8.0	15	Excellent hardness and blocking resistance, fast drying, good sandability and chemical resistance. Excellent in-can clarity and solvent-like appearance in the dry coat.
SETAQUA 6799	Acrylic dispersion, surfactant free	●	41%	8.5	5	Excellent blocking resistance when applied in thick films, good transparency and non-yellowing properties. Good outdoor durability and dirt pickup resistance, long open time.
SETAQUA 6721	Acrylic dispersion, surfactant free	●	40%	8.5	20	PAHs free. Excellent hardness and blocking resistance, fast drying, good sandability and chemical resistance. Excellent in-can clarity and solvent-like appearance in the dry coat. Printing suitability.
SETAQUA 6754	Acrylic dispersion	●	40%	9.0	58	Good hardnesss, gloss, chemical and blocking resistance, good hot tire resistance and multi-substrate adhesion.
SETAQUA ECO 4008	Acrylic emulsion	●	50%	7.5	20	Exceptional scrub and stain resistance, low odor. Wide formulating window with good Titanium Dioxide efficiency and rheology response.
SETAQUA ECO 4021	Pure acrylic emulsion		50%	7.5	10	Exceptional scrub and stain resistance, low odor. Wide formulating window with good Titanium Dioxide efficiency and rheology response.
SETAQUA ECO 6778	Acrylic dispersion	●	44%	8.8	26	High gloss, good appearance, good application properties and excellent blocking resistance. Good durability.
SETAQUA PAVE 700	Acrylic dispersion	●	40%	8.8	49	Good hardnesss, gloss, chemical and blocking resistance, good hot tire resistance and multi-substrate adhesion.
UCECRYL® B 3034	Pure acrylic emulsion		45%	8.0	35	Durable polymer with excellent film hardness development,water whitening, chemical and hot tyre pick-upresistance.
MACRYNAL® SM 6826/43WA	Acrylic polyol emulsion		43%	7.5	n.a.	Very high dry film thickness possible (> 150µm) without defects. Fast surface drying, shear stable with high pigment loading possible.

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Application features

Product	Technology	allnex sustainability pillar	Primer/ Basecoat	Topcoat	Interior	Exterior	Architectural Aluminium Extrusion	Broad Wall	Decorative Wood	Metal Facades	Flooring	Trim /Joinery	Exterior General Metal		Key Performance Features
CRYLCOAT® 2666-3	Unstaurated standard durable polyester			●	●	●	●								Tribo HAA resin with excellent weathering and very good flow. Improved blanching resistance. Overbake and gas oven resistance.
CRYLCOAT 2678-3	Unstaurated standard durable polyester			●	●	●	●						●		Low HAA demand resin with good flow, excellent outdoor durability, yellowing resistance and high degassing limits.
CRYLCOAT 2696-6	Unstaurated standard durable polyester			●	●	●							●		Low bake bloom resistant HAA tribo resin for Industrial applications. Overbake and gas oven resistant.
CRYLCOAT 4420-0	Unstaurated superdurable polyester			●	●	●	●								Resin for matte dry blend superdurable systems in combination with high CRYLCOAT® 4641-0.
CRYLCOAT 4641-0	Unstaurated superdurable polyester			●	●	●	●								Resin for matte dry blend superdurable systems in combination with high demand HAA resins.
CRYLCOAT 4642-3	Unstaurated superdurable polyester			●	●	●	●						●		High reactive Superdurable.
CRYLCOAT 4655-2	Unstaurated superdurable polyester			●	●	●	●								Fast curing superdurable. Can replace up to 30% of low bake standard durable HAA resins to improve blooming resistance, outdoor durability and reactivity.
CRYLCOAT 4659-0	Unstaurated superdurable polyester			●	●	●	●								Superdurable resin for use with HAA or TGIC, with outstanding flow and bloom resistance.
CYMEL® NF 3030	Formaldehyde free, waterbased crosslinker		●		●					●					Fast drying, non-formaldehyde release during drying, excellent chemical resistance, good mechanical properties.
MACRYNAL® SM 6826/43WA	Acrylic polyol emulsion		●	●	●						●				High quality primer as well as matte top and clear coats with very fast surface and hard drying with high resitance to chemicals and solvents.
SETAQUA® 6716	Acrylic dispersion, surfactant free		●	●	●										Excellent blocking resistance, excellent in-can and dry film clarity, good sandability and colour stability.
SETAQUA 6756	Acrylic dispersion, surfactant free		●	●	●										Excellent blocking resistance, fast drying, excellent in-can and dry film clarity, good sandability.
SETAQUA 6799	Acrylic dispersion, surfactant free		●	●	●	●						●			Excellent blocking resistance when applied in thick films, good transparency and non-yellowing properties. Good outdoor durability and dirt pickup resistance, long open time.
SETAQUA 6721	Acrylic dispersion, surfactant free		●	●	●				●						Excellent blocking resistance, fast drying, excellent in-can and dry film clarity, good sandability and printability.
SETAQUA 6754	Acrylic dispersion		●	●	●				●	●	●				Good hardness, gloss, chemical and blocking resistance.
SETAQUA ECO 4008	Acrylic emulsion			●	●			●							Specifically recommended for use in flat and low sheen interior broad wall coatings with exceptional scrub resistance and very good stain resistance properties.
SETAQUA ECO 4021	Pure acrylic emulsion			●	●			●							Specifically recommended for use in flat and low sheen interior broad wall coatings with exceptional stain resistance properties.
SETAQUA ECO 6778	Acrylic dispersion		●	●	●	●			●			●			High gloss, good appearance, good application properties and excellent blocking resistance. Good durability.
SETAQUA PAVE 700	Acrylic dispersion			●	●	●					●				Excellent wet and dry hot tyre resistance, durability and adhesion to cementitious based surfaces.
UCECRYL® B 3034	Pure acrylic emulsion			●	●	●					●				Excellent film hardness development,water whitening,chemical and hot tyre pick-up resistance.

Safer materials Energy efficiency

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Questions & Answers

What is ECOWISE™ CHOICE?

a. Be ECOWISE is the allnex attribute for all initiatives with a sustainability value and ECOWISE CHOICE is a portfolio of products meeting the most stringent sustainability requirements in the industry.
b. We have assessed our products against ecolabels' criteria to ensure products in the ECOWISE CHOICE range can help our customer meet these requirements. We have documentation available to communicate the criteria used.

How is allnex selecting the ECOWISE CHOICE portfolio?

a. In setting up the methodology, process and guidelines we have closely followed the recommendations provided by World Business Council for Sustainable Development (WBCSD, 2019). Additionally KPMG Sustainability analysed our Sustainability Portfolio Management methodology. This resulted in an improved SPM methodology and governance structure that allows a continuous improvement approach in order to steer our product portfolio towards a more sustainable one. More information is available at www.allnex.com/en/technologies/ecowise-choice

How often is the ECOWISE CHOICE portfolio reviewed?

a. The ECOWISE CHOICE portfolio is a living selection following evolution of our product offerings, changing benchmarks and market needs. You will see more products being added as we continue the assessment of our current portfolio and new products are introduced to market. Furthermore, allnex is continuously monitoring regulatory updates and developing trends. These identified changes will be implemented during annual reviews. However, this process may be expedited if we see a strong indication of changing trends which would significantly impact the relevancy of ECOWISE CHOICE.
The products and questionnaire listed in this version of the document are updated as of July 2021. Kindly refer to the allnex website for the latest version www.allnex.com/en/technologies/ecowise-choice

How can allnex support me with regards to data on renewable and recycling content?

a. We can provide an allnex declaration of renewable or recycled content based on our suppliers' statements and our internal auditing. For renewable materials C14 or biomass balance declaration will be issued, depending on customer needs, the raw material supply, and process flows. The ability to issue a C14 declaration for a product may require investments in the supply and process chains which will be considered after validation with customers.
b. We are adopting a responsible sourcing vision to develop our new renewable products, including considerations on issues as competition with food, land use and impact on local communities in materials selection. We target sourcing from 2nd generation feedstock (by-products/ residues from forestry, agriculture, industry or waste streams) whenever possible, and we evaluate sources that use regenerative agricultural and forestry practices.

For more information, please refer to our renewable materials brochure. www.allnex.com/getmedia/f7f51d17-bb2c-47fd-9527-6da07e2b2deb/0141_ALRenewables_web.pdf

How can allnex support me on LCA data?

a. Cradle-to-cradle Life-Cycle Assessment (LCA) is a thorough scientific approach to examine a product in its different applications. For the purpose of the ECOWISE CHOICE selection we limit the assessment to a qualitative analysis to identify the environmental benefits of our product in comparison to the competition. These benefits range from improved technical performance, increase energy efficiency or lower emissions. The SPM relies on qualitative thinking to ensure other material topics (e.g. durability) are covered.
b. We are open to having further discussions with you, should you need data for your own LCA. Please reach out to psra-customer-requests@allnex.com if you wish to discuss your needs with an allnex representative.

Glossary of Terms

Term	Definition
BREEAM	Building Research Establishment Environmental Assessment Method.
BU	Business Unit.
C14	Radiocarbon, or carbon-14 (also written as 14C), is an isotope of carbon that is unstable and weakly radioactive. Recently living materials (the bio based component) have Carbon-14 while fossil fuel derived materials do not. Bio based carbon content of a product is determined by radiocarbon dating method (ASTM 6866) by analyzing the radioactive carbon content versus the total carbon content.
CMR	Carcinogenic, Mutagenic or Toxic for Reproduction.
ECHA	European Chemicals Agency.
GHG	Greenhouse Gas. A gas that contributes to the natural greenhouse effect. The Kyoto Protocol covers a basket of six greenhouse gases (GHGs) produced by human activities: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride. Annex I Parties' emissions of these gases taken together are to be measured in terms of carbon dioxide equivalents on the basis of the gases' global warming potential. An important natural GHG that is not covered by the protocol is water vapor. Source: European Commission. Climate change: Glossary of common terms and acronyms. http://glossary.eea.europa.eu/EEAGlossary/G/greenhouse_gas.
LCA	Life-cycle assessment (LCA) is a process of evaluating the effects that a product has on the environment over the entire period of its life thereby increasing resource-use efficiency and decreasing liabilities. It can be used to study the environmental impact of either a product or the function the product is designed to perform. LCA is commonly referred to as a "cradle-to-grave" analysis. LCA's key elements are: (1) identify and quantify the environmental loads involved; e.g. the energy a nd raw materials consumed, the emissions and wastes generated; (2) evaluate the potential environmental impacts of these loads; and (3) assess the options available for reducing these environmental impacts. Source European Commission. Climate change: Glossary of common terms and acronyms, https://www.eea.europa.eu/help/glossary#c4=10&c0=all&b_start=0&c2=lca
LEED	Leadership in Energy and Environmental Design.
PAC	Product Application Combination, used to analyse a product in combination with the relevant market application to assess it's sustainability value.
REACH	Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals.
SPF	Starting Point Formulation. Recommended formulation for a product for use in a coating.
SPM	Sustainable Portfolio Management.
UNSDG	United Nations Sustainable Development Goals.
UV	Ultraviolet UV curing or energy curing is a type of coating technology cured by ultraviolet radiation.
WB	Water borne. WB coatings are type of coating technology where the carrier is water.

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Notes