

Journal

21 2023

Information from
Worlée-Chemie GmbH



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Dear customers, partners and friends,

Like many of you, we are probably in the middle of preparations for the European Coatings Show in Nuremberg at the end of March. For this reason, we have decided to publish a shortened issue of our WorléeJournal, but at the same time we would like to take this opportunity to give you a brief insight into our trade show concept.

You can look forward to a short overview of our six trade fair themea as well as further topics of our principals. You can listen to all these product introductions in small 20-minute presentations at our live@Worlée meets Friends webinars before the show. You will receive all registration information in the issue. Finally, we don't want to deprive you of a review of our past BrandschutzExpo in Lauenburg.

We look forward to seeing you all again at the ECS in a few weeks, until then we hope you enjoy reading the 21st issue of the WorléeJournal!

Joachim Freude,
Managing Director

European Coatings Show
Booth Scheme and Show Topics

Live@Worlée meets Friends
Interesting product presentations
in our live webinar series

Events
Fire Protection Expo Lauenburg

European Coatings Show

28th - 30th March 2023 in Nuremberg



In 2019, we were at the European Coatings Show in Nuremberg. for the last time. After a forced break of 4 years, we are finally happy to be back in Nuremberg and to have the opportunity to see everyone again. We are looking forward to three exciting trade show days with lots of input and many visitors.

Our trade fair concept will be a bit different this year than the years before. With six main topics, we would like to show you information about our new technologies and provide you with in-depth knowledge through short presentations.

At our booth you will find six stations on various new product developments and our sustainability management. Our employees will then give you an understanding of these topics in the form of presentations. For better orientation, we have numbered our stations. Which product topic you will find at which number

is shown on the following pages. Would you like to learn more about other products or topics at our booth? No problem, our colleagues are at your disposal for further discussions. Visit us at booth 3-619.

All topics will also be presented in advance in our live@Worlée meets Friends webinars. Our principals will also present exciting talks on product developments in various sessions. You will receive more information about the product presentations on the following pages.

Visit us at
booth number
3-619





Sustainability Management

The holistic approach to sustainability at Worlée-Chemie and how we meet current CSR challenges

What are the most important elements of Worlée -Chemie's sustainability management at company level? Which initiatives support us on our path? Which strategies do we follow? Find out more about how Worlée-Chemie meets today's and future challenges such as implementing the 17 SDGs into operational practice, achieving climate neutrality, promoting sustainable product development, fulfilling due diligence along the value chain and complying with future reporting obligations

Modern binders for a wide range of more sustainable, and high quality paint and lacquer formulations.

In the second part you will find out how Worlée-Chemie can support you to fulfill today's and future requirements on the sustainability goals such as, use of renewable raw materials in our binders to achieve a higher bio-based content, use of local supply chain not/less in competition with food production, use of biomass waste / second generation raw materials and replacement of solvent based coatings by water based alternatives.



WorléePur Si

Bio-based dual cure binders for high quality solvent-based and solvent-free paints, wood oils and clear coats

Alkyd resins are an important product group that can be used in a wide variety of coating systems. By definition, they are based on high proportions of bio-based raw materials - mostly vegetable oils. However, the growing demands pose some challenges for alkyd resins. For example, the solvent content is to be further reduced and cobalt-containing siccatives and oxime-containing anti-skin agents are to be dispensed with. The silane-functional polyurethane-urea binders of the WorléePur Si series achieve exceptional properties, especially in terms of drying speed, hardness and chemical resistance. Before application, a catalyst must be added so that the hydrolysis and polycondensation of the silane groups contained in the binder can take place. Although the pot life can be several days, weeks or even months, for many consumers it is not an alternative for 1K paint systems. These are usually easier to apply and have an infinite pot life. However, the technology could be significantly further developed. The first prototypes combine high proportions of bio-based raw materials with the oxidative drying of alkyd resins and the moisture curing of silane-functional systems. In addition, properties such as hardness development and chemical and mechanical resilience are optimised. This technology can thus contribute to the adaptation of many coating systems to current and future requirements.



WorléePUD

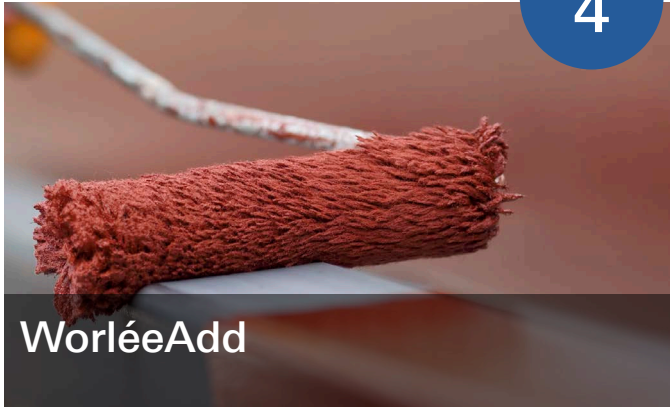
Polyurethane dispersions for particularly stressed paint coatings

Polyurethane dispersions have been established in various coatings applications for many years and are an indispensable part of modern coatings formulations. The polymeric structure of polyurethanes permits a large number of variations, which means that a wide variety of property profiles can be tailor-made. Users of these coating systems are particularly impressed by their mechanical properties.

They provide coating formulators with a wide range of possible applications in high-quality coating systems. The main components of the polyurethane dispersion, polydiol and diisocyanate, can be combined according to a kind of modular system. Tailor-made properties can be produced by numerous variations of individual components in terms of type and structure.



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WorléeAdd

Fatty acid modified acrylated epoxy resin esters for use as a mixing component in water based, air drying one component coatings on metal substrates

Epoxy resins have always been an important class of binders in terms of adhesion and corrosion protection of metal surfaces.

Classical epoxy resins are obtained by condensation of epichlorohydrin and bisphenol. The resulting polymer molecules exhibit, among other things, excellent adhesion properties due to the polar character of the resin molecule. Low-molecular epoxy resins are light to viscous. High-molecular epoxy resins are solid resins with melting points up to 150° C. Through further targeted modification of the epoxy resin by esterification with fatty acids and acrylation, it is possible to change the physical properties in such a way that the coating formulator has a significantly wider range of variations available for use in liquid coatings. Interesting property profiles can be obtained by this type of modification, especially for use as combination resins. The presentation will focus in particular on the improvements in one-component air-drying coating systems directly on metallic substrates.

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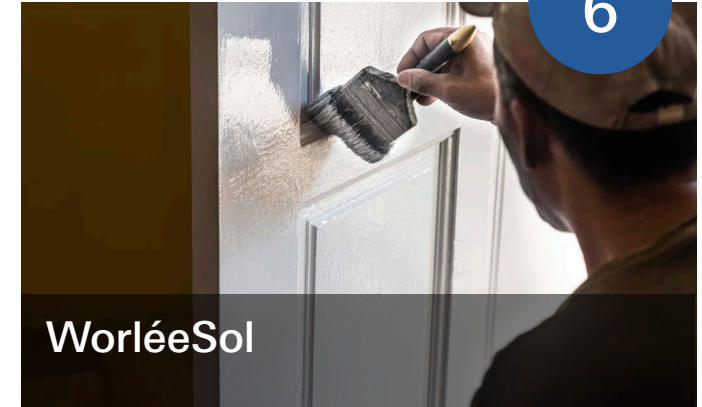
WorléeCryl

Cationic binders with excellent insulating properties

Wood is a very complicated substrate with different and even seasonally fluctuating properties. Beside the inhomogeneous structure or the shrinkage, painters have to face the so called "bleeding" of wood ingredients. Bleeding occurs as a discoloration of the coating and is caused by water-soluble tannins, which are transported to the surface by the evaporating water.

One possibility to avoid bleeding is the use of fixating metals salts, which often does not induce the desired effect in full or leads to side effects. Another option that is more and more considered is the use of cationic acrylic binders, which indeed show excellent insulating properties in wood primers or decorative coatings. They also have great other stain-blocking properties e.g. against nicotine. This presentation will focus on the use of cationic acrylic binders and the difference between cationic solutions and dispersions will be discussed.

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WorléeSol

The broad spectrum of alkyd resins in water

Alkyd resins are a successful group of binders for the coating industry for a long time. They are well known for good leveling properties, high gloss surfaces and a beloved rheology for brushing. It all started with solvent-borne systems, but today water-based systems are common and particularly in the decorative market more often the first choice. Alkyd resins for water-based coatings are still hydrophobic polycondensates that contain fatty acids or oils, so they need to be emulsified. The first generation are water dilutable alkyd resins, which are emulsified by neutralization of the acid groups. Co-solvents are part of the production process and support the compatibility in water. Beside this internal stabilization it is also possible to add emulsifiers to stabilize externally.

Modern types contain less and less VOC and more and more sustainable ingredients. Different modification are possible like acrylation or PU-modification. All that possibilities lead to a broad spectrum of alkyd binders for waterborne systems. This presentation gives different examples from the Worlée-Portfolio for water-based alkyds and focuses on a new development of an externally emulsified alkyd resin.



live@Worlée meets Friends ECS Special

To give you a little insight into our show topics we have put together an extensive and interesting webinar program in our live@Worlée meets Friends. As last time, our long-time partners and principals Synthomer, Hobum Oleochemicals, Estron Chemical Inc, Bruno Bock Thiochemicals, Vencorex and King Industries International will be there. Each presentation will be conducted independently of the others, so feel free to register for any session that interests you and then dial in at that presentation time. Below is the schedule for March 21 and 22, 2023, and we look forward to your participation and an exciting exchange with you.



March 21st. 10:45 - 11:05 AM

„Coatings for masonry substrates with improved functionalities“

Water based architectural coatings on the one hand are attractive from an environmental, toxicological, health and safety point of view, on the other hand the water-borne technology showed some limitations in application and functional properties e.g. poor dirt pick-up resistance. Synthomer has recently introduced several new binders that contain improved functionalities. These deliver improvements in application properties like early rain resistance or better resistance against exudation, efflorescence and dirt-pick-up.



March 21st, 11:15 - 11:35 AM

„Products for the next generation“ - Natural. Innovative. HOBUM

Would you like to use more sustainable and bio-based products whose performance is comparable to petrochemical products? We developed for you an innovative new thinner Merginat EP 305 for the processing of epoxy systems. A decisive advantage is the labeling of the product. The significantly lower classification compared to the petrochemical market standards gives you a competitive advantage over your market competitors. Another innovation is the hardener Merginamid A 282, which has a very high content of bio-based raw materials. It is ideal for coating mineral substrates and meets strict international regulations for low-emission construction. The processing viscosity of your formulation can be adjusted very well with Merginat EP 305.



March 21st, 1:00 - 1:50 PM

„Thiocure – Universal crosslinkers for coatings, adhesives and sealants“

The Thiocure portfolio consists of a range of polymeric and non-polymeric polythiol products which can be widely combined with commercially available isocyanates, epoxies and acrylates in the formulation of coatings, adhesives and sealants. An overview of the portfolio and the main advantages that Thiocure products provide in combination with the individual resins will be provided. In addition we will present some general information about the use of Thiocure products and the properties that can be achieved when using Thiocure products.



March 21st, 1:00 - 1:50 PM

„Highly Dispersible Carbon Black for Water Borne Systems“

Cabot's highly dispersible carbon black (HDCB) is a new colorant designed to reduce or completely eliminate the need for milling and dispersant use in waterborne systems. When compared to other pigment blacks this product has also been shown to achieve lower viscosities in coating formulations. As a result, using the HDCB in a system can reduce formulation, processing and logistics cost by replacing colored chips or colored dispersions. Our highly dispersible carbon black can be used in a diverse range of applications including industrial, concrete and cement coloration. You are invited to a 30 minute webinar to learn more about the benefits highly dispersible carbon black can impart to your formulations.





March 22nd, 10:45 - 11:05 AM
„REACH Restriction of Diisocyanates: the way to a safer polyurethane industry“

Join this presentation to learn how to protect the workers of the polyurethane industry thanks to the new minimum standardized training developed by ALIPA & ISOPA and some downstream associations. In addition to meeting the requirements of the new EU restriction regulation, the target of this training is more fundamentally to ensure a safe use and handling of diisocyanates, which is why it is highly recommended to follow it in any cases, even though some products are exempted from the training obligation. Vencorex will present you the e-learning training, easily accessible on the digital platform www.safeusediisocyanates.eu with various training options.



March 22nd 1:00 - 1:20 PM
„Additives for CASE and Foam“

King Industries, Inc. is a leader in additive development for the paint and coatings industry and a global supplier of specialty chemicals like NACURE and K-KAT. Our NACURE range consists of a variety of acid and blocked acid catalysts for amino thermoset coatings. Our K-KAT range offers more environmentally acceptable additives for coatings. It includes aluminum, bismuth, zinc, and zirconium catalysts. King industries has also recently introduced new products like NACURE PC-100 for powder coating applications and NACURE XC-2019 for untreated Hot-Dip Galvanized steel.



March 22nd, 1:30 - 1:50 PM
„Additives and Resins for the Liquid Coating Formulator“

For close to 50 years, ESTRON CHEMICAL has manufactured and supplied innovative specialty additives and resins for the industrial liquid coatings market. This presentation aims to give insight into ESTRON's capabilities and products in the field of liquid coatings. These include a unique range of UV cure products, binder resins and leveling additives. ESTRON's liquid products are used in a wide range of coating applications from coil coatings used on industrial façades to high scratch resistant coatings for plastics used in the exacting industries of automotive and security coatings.

Worlée presentations:

March 21st

10:15 - 10:35 AM
„Waterborne binders & Worlée at ECS 2023“

1:00 - 1:20 PM
„Fatty acid modified acrylated epoxy resin esters for use as a mixing component in water based, air drying one component coatings on metal substrates“

2:00 - 2.20 PM
„Bio-based dual cure binders for high quality solvent-based and solvent-free paints, wood oils and clear coats.“



Sign up for our live@Worlée meets Friends webinars on March 21st and 22nd.

» [More information on our website](#)





First Fire Protection Expo in Lauenburg

Fire protection of various materials is an important safety factor for many companies or even in the private sector. With the help of our product developments, we would like to be able to offer our customers this safety.

On February 22nd, together with our partner MAGNESIA, we invited to our first Fire Protection Expo in Lauenburg. Awaiting the 40 participants from all over Germany was an exciting day with an active exchange of ideas.

The special feature: participants could send their own substrates to us in advance so that they could be pre-coated by us. The pre-coated surfaces were then impressively flamed and inspected afterwards. On the day of the workshop, surfaces of the participants could also be coated. The pre-coated surfaces were then impressively

flamed and inspected afterwards. On the day of the workshop, surfaces of the participants could also be coated.

After the product presentation by Worlée and MAGNESIA, the participants were divided into different stations and were allowed to formulate the fire protection system together with our employees and apply it to various surfaces themselves. These formulations were then subjected to the endurance test and checked in the plenum on the basis of fire tests.

At the end, there was a brief evaluation of the results. In addition to the presentation of the fire protection system, a thermal insulation system WorléeShield was also presented. The participants were able to formulate here as well and

then apply the system themselves. Additionally Tips and tricks were provided for both systems.

For Worlée and MAGNESIA it was not only a successful event, but also an opportunity to further expand business areas and customer relations. We are very pleased about how much the participants enjoyed this event and assume that it will certainly not be the last event of this kind.

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