



EUROPEAN

COATINGS SHOW 2021

preview

The show and conference preview – www.european-coatings-show.com – June 2021

FACE TO FACE IN NUREMBERG!

The European Coatings Show 2021 will take place with a sophisticated safety plan in place

Source: Helko Stahl



The prospects are looking good for another edition of the European Coatings Show, which will display a whole load of innovations.

After a protracted period of only virtual communication, the coatings industry is longing for face-to-face meetings and personal exchanges. The coronavirus has had a deep impact on the whole world, and on-site trade shows have not been possible for more than a year. The prospects are now looking good for another edition of the European Coatings Show (ECS).

The ECS 2021 will take place on the exhibition grounds of Nürnberg-

Messe, with real exhibition halls and stands.

The ECS is the global coatings industry's flagship trade show and has been rescheduled for 14-16 September 2021 because of the ongoing pandemic and the associated travel restrictions.

As usual, the ECS will feature trends and technologies covering all aspects of the production of paints, coatings, sealants, construction chemicals and adhesives in Nuremberg, Germany. Of course, the well-being of visitors and exhibitors alike is of paramount importance to the organ-

isers. Thus, a sophisticated safety and hygiene plan has been developed to make sure that everyone's stay in Nuremberg is as secure and as pleasant as possible.

"We can't wait for the ECS to open its doors," says Amanda Beyer, head of coating events at Vincentz Network, co-organiser of the show. "Some things might be a little different," she adds. "However, the ECS, with its adjoining conference, will still be the most important gathering of the coatings industry."

Alexander Mattausch, Executive Director of Exhibition at Nürn-

bergMesse, is equally enthusiastic: "We will remember the ECS 2021 as the first live exhibition of this wonderful industry after more than a year of shutdown in the fight against Covid-19. To make it happen, we have been working on plans that are designed to make it a safe and successful show."

FOR MORE INFORMATION, PLEASE VISIT:
www.european-coatings-show.com

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WHAT'S UP!

EUROPEAN COATINGS SHOW

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ECS CONFERENCE

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CONFERENCE

FIRST TIME IN HYBRID FORMAT

Extraordinary times call for extraordinary measures: for the first time, the European Coatings Show Conference is being held in a hybrid format, with international coatings experts brought together on a digital platform as well as face to face in Nuremberg, Germany. The conference can be attended by anyone, regardless of their budget or distance from the venue. With 120 presenta-

tions in 20 sessions, 5 short courses and countless networking possibilities, the conference on 13 and 14 September 2021 serves up everything you need to be able to thrive in the fiercely contested coatings market.

FOR MORE INFORMATION, PLEASE VISIT:
www.european-coatings-show.com/conference

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Safety and hygiene have top priority at the ECS.

Rest assured: The organisers of the ECS have answers to your questions. They have devised a comprehensive, reliable and practicable plan and drawn up and intelligently implemented a bundle of measures based on official regulations.

All parties involved in the show will be given effective support – visitors and exhibitors, stand designers and set-up teams, service providers and partners alike. You will not be left alone with Covid-19 related measures. A full-service support will be provided.

Of course, you have questions: Can I travel to ECS 2021? Will I be safe there? Will my visit to the trade show be successful as well as enjoyable? What the organising team provides for you as a visitor:

- > Covid-19 requirements implemented effectively,

- intelligently and practically. Your trade-fair experience is of paramount importance and takes centre-stage.
- > More space available – for conversations, meetings and moving around.
- > Digital support: access, secure contacts, routing, payments – contactless and modern.
- > Highest hygiene standards – naturally, comprehensive security will be provided for everyone throughout the exhibition grounds: visitors, exhibitors, service teams.
- > Social distancing: a distance of 1.5 m between people in all areas of the exhibition grounds is required.
- > Face coverings: visitors and exhibitors alike are required to wear masks in the interior spaces of the exhibition venue. Regulations regarding the obligation to wear masks are continuously adapted to the current legal requirements.



MORE INFORMATION

To find out more about the measures we have taken to ensure a safe and pleasant show experience, click here:

www.european-coatings-show.com/exhibition-experience

In addition, the latest information for travellers can be found on the official websites of:

The German Foreign Ministry of Health
www.bundesgesundheitsministerium.de

The German Federal Foreign Office
www.auswaertiges-amt.de/en/einreiseundaufenthalt/coronavirus

WELCOME

“BEST PLATFORM FOR CONNECTING WITH PEERS”

Counting down the days until the ECS opens its doors

The ECS had to be re-scheduled from its usual March date to mid-September due to the coronavirus pandemic. This year's exhibition might be slightly different from its predecessors, but Alexander Mattausch, Executive Director of Exhibitions at NürnbergMesse, and Amanda Beyer, Director of Events Management at Vincenz Network, are certain that ECS 2021 will live up to industry's expectations.

Alexander Mattausch: “2021 is definitely a year we will all remember. It will go down as the second year of the pandemic, when we all had to overcome unforeseen challenges. But we will also remember it as the year we got back to normal: in our personal lives, and also in our professional lives. We will remember the European Coatings Show 2021 as the first live exhibition of this wonderful industry after more than a year of shutdown in the battle against Covid-19. To make this happen, we have been drawing up plans to ensure it is a safe and successful show. Will it be the ECS as we knew it? No, it will be special – but at the same time, the entire industry will make



Alexander Mattausch
NürnbergMesse



Amanda Beyer
Vincenz Network

this event special, and I mean that in the most positive way! We are all looking forward to meeting the whole industry this year from 14 to 16 September!”

Amanda Beyer: “We can't wait for the ECS to open its doors. We are yearning to see our friends and partners from the industry. We long to speak to you without the aid of video calls. We very badly want to make new contacts and hear from people from outside our everyday bubble. We are literally counting down the days to when we can hear and discuss in person what you have been working on. So many of you have contacted us and expressed that you feel the same way. We are grateful for your trust and support. Please

know that we will do everything we have to – and more – to make sure the ECS takes place and that you are safe at the ECS. Some things might be a little different: we still won't be shaking hands, we might have to keep a little more distance, there will be areas where masks will have to be worn and we will certainly see a greater number of hand-sanitising stations. The most important things, of course, will stay the same: the ECS with its adjoining conference will still be the most important gathering of the coatings industry. It will bring together the decision makers, it will showcase global coatings' innovations all in one place and it will be the best possible platform for connecting with your industry peers.”



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A large industrial machine, the BUHLER MicroMedia Invicta bead mill, is shown in a clean, white environment. The machine has a prominent teal-colored cylindrical component at the bottom. The top section is white with the BUHLER logo and the model name 'MicroMedia Invicta' printed on it. The machine is mounted on a stainless steel frame. The background is a soft, out-of-focus white, suggesting a laboratory or industrial setting. There are some technical details like pipes and valves visible on the right side of the machine.

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more on our website.

*compared to its predecessor

EXHIBITOR VOICES

“ALWAYS BEEN A HIGHLIGHT”

Exhibitors about the reasons why they participate in the European Coatings Show

The industry is looking forward to finally meeting up again in Nuremberg. Three exhibitors explain why the European Coatings Show is a must attend event.

trends: this includes exchanging information about modern, innovative materials, raw materials for increasing productivity or improving price/performance, and value-added system solutions.”

Dr Martin Liebenau: “The ECS is a key date in our calendar and the optimal platform for staying in touch with all our customers and suppliers and for gaining new partners. The past few months have shown how irreplaceable personal exchanges are, even if, unfortunately, these can only occur digitally at the moment. As an application technology distributor, we look forward to actively engaging in discussions about market innovations and

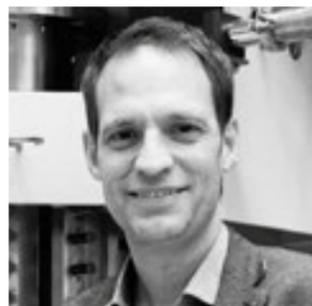
Mark Traber: “The European Coatings Show has always been a highlight for us because it is one of the most important trade fairs of global significance that we participate in. We are particularly looking forward to ECS 2021, where we will be able to meet our customers in person again after a long period of virtual meetings and working from home. We have used this time to further develop our products and solutions, which contribute to the success of our customers by boosting efficiency and productivity.”

“The ECS is a key date in our calendar.”

Dr Martin Liebenau, Biesterfeld



Dr Martin Liebenau
Biesterfeld



Mark Traber
Bühler Group



Michael Friede
Covestro

Michael Friede: “The European Coatings Show is undisputedly the world’s largest trade fair for the coatings industry; for this reason alone, active participation is a must for Covestro. This

industry event provides us with a platform to showcase our innovative and sustainable developments to the coatings and adhesives industry and to present the integrated Resins & Functional

Materials businesses in sustainable coating resins acquired from Royal DSM. During this coronavirus pandemic, we want to offer customers and visitors a hybrid solution: we continue to believe in the trade-fair experience and are keen to use the three days of the ECS for an intensive exchange of views with our customers and other stakeholders. No-

where else can we find so many and such valuable contacts gathered together in one place. The safety of visitors and our staff is our top priority, and we believe that the hygiene plan being adopted for the fair and our own measures at the stand will ensure this. In addition, we intend to go down completely new digital paths to inspire our

customers. For example, when the trade fair is in progress, we will invite them to a virtual showroom where they can move around freely and discover new things. We also want to promote interaction with them via other platforms and channels. It is our goal to make the European Coatings Show 2021 an unforgettable experience for them.”

“Nowhere else can we find so many and such valuable contacts gathered together in one place.”

Michael Friede, Covestro



The industry is looking forward to the ECS opening its gates again.

Source: Heliko Stahl



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DÖRKEN

INNOVATIONS

A SAFE AND FASCINATING CONFERENCE

The European Coatings Show Conference will open its doors with 20 sessions and 120 speakers.

The biggest coatings conference in Europe is set to open its doors once again. Thanks to the rapid rise in the number of vaccinations, the conference will kick off on 13-14 September with a top selection of lectures and – of course – a strict hygiene plan in place.



More than 100 speakers will present the latest innovations and scientific findings for the coatings industry over the course of 20 sessions. A special highlight will be two sessions dedicated to the findings of two major EU-funded international research collaborations.

The first of these will present the findings of the DECOAT project. Its goal is to enable circular use of textiles and plastic parts with (multilayer) coatings, which are typically not recyclable yet. The project is therefore looking into novel triggerable smart polymer material systems and is working on developing corresponding recycling processes.

The second will be the European Union's Horizon 2020 project CHOPIN. This international research collaboration has done extensive work on developing coatings that possess hydrophobic and/or omniphobic properties aimed at combating insect contamination. This can help to increase sustainability

in the aircraft industry by reducing drag and therefore fuel consumption. The findings of this project will be presented in a dedicated session, along with lectures on anti-soiling coatings. Of course, there will also be many more interesting sessions on classic topics such as wood coatings, water-borne systems and polyurethanes, as well as sessions on hot topics such as bio-based coatings and digital transformation.

FOCUS ON SUSTAINABILITY

The conference will open with a key-note from Jost Broeders, Technical Director for Innovation and Sustainability at Baril Coatings. He will speak about how sustainable development goals will impact the coatings industry. And, of course, the

prestigious European Coatings Show Conference Award will be handed over to the author who submitted the most innovative paper.

Even though vaccination is picking up pace, a strict hygiene plan will be in force for the conference to ensure that the event is safe for all participants. This will cover such as areas ventilation, hygiene rules and much more. The conference will also take the form of a hybrid event that will allow participants to attend via online streaming. This will give them the opportunity to attend the conference even though they may be unable to travel at that time.

CONFERENCE PROGRAMM
www.european-coatings-show.com/en/conference

Sunday / 12 September 2021

15.00 – 18.30 h Pre-conference tutorials

Monday / 13 September 2021

8.30 – 09.45 h Plenary Session: Welcome address, Conference introduction, European Coatings Show Award, Keynote presentation

10.00 – 13.30 h Parallel sessions 1-5
 Session 1: Project DECOAT
 Session 2: Pigments & fillers
 Session 3: Powder coatings
 Session 4: Automotive coatings
 Session 5: Digitisation

13.30 – 14.30 h Lunch break

14.30 – 18.00 h Parallel sessions 6-10
 Session 6: Printing inks
 Session 7: Functional & smart coatings
 Session 8: Adhesives & sealants
 Session 9: Architectural coatings
 Session 10: Project CHOPIN & anti-soiling coatings

Tuesday / 14 September 2021

9.00 – 12.30 h Parallel sessions 11-15
 Session 11: Construction chemicals
 Session 12: Wood coatings
 Session 13: Radiation curing
 Session 14: Water-borne coatings
 Session 15: Protective coatings I

12.30 – 13.30 h Lunch break

13.30 – 17.00 h Parallel sessions 16-20
 Session 16: Bio-based coatings
 Session 17: Polyurethane coatings
 Session 18: Testing & Measuring
 Session 19: Novel materials
 Session 20: Protective coatings II




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KEYNOTE

BIO-BASED BUILDING BLOCKS AND SUSTAINABLE COATINGS

The international Sustainable Development Goals (SDG) will be a main topic at this year's keynote speech



Joost Broeders
Baril Coatings

Sustainability is the megatrend in the coatings industry. This will be reflected in this year's key-note speech given by Joost Broeders, Technical Director with re-

sponsibility for Innovation and Sustainability at Baril Coatings. Aside from ongoing trends such as the shift to water-borne systems and more efficient coatings, the introduction of more bio-based building blocks is the latest addition to secure the transformation towards a more sustainable coatings industry

G His key-note "Living in challenging and interesting times as paint chemists – how SDG's and true value impact reporting give guidance" will kick off Europe's largest coatings conference. Joost Broeders has a background in polymer

science and process technology from the Technological University of Eindhoven. He has now been working at Baril coatings for over 20 years where he has made a name for himself as the "godfather" of sustainability.

In his keynote he will address the question of whether, and by how much, bio-based coatings can contribute to a more sustainable industry. Baril Coatings is "only" a medium-sized coatings manufacturer, but it has a long history of collaboration with raw materials suppliers and was a member of several EU-wide research consortia. 

PRE-CONFERENCE TUTORIALS

COVER THE BASICS

Short lectures about basic coatings knowledge

Tutorials on 12 September will give a comprehensive introduction into important coatings topics.

New to the coatings industry or planning a career change? A number of pre-conference tutorials held the day before the European Coatings Show Con-

ference give you the opportunity to learn all the important basics on multiple topics.

The pre-conference tutorials held on the Sunday before the European Coatings Show Conference are a long-established and prized tradition that will be continued this year. The pre-conference tutorials scheduled for 12 September will cover

polyurethane coatings, formulating adhesives and sealants, biocides and their legislation, dispersing pigments and fillers, and functional coatings. The aim of the tutorials is to provide a comprehensive and deep overview of these topics in one afternoon and they will be hosted by experienced and well known experts in their own fields. 

Sunday / 12 September 2021

15:00 - 18:30 CET

Tutorial
schedule

Topic

Lecturer

Polyurethane coatings

Dr Ulrich Freudenberg, formerly Covestro

Formulating adhesives and sealants

Dr Matthias Popp, Fraunhofer IFAM

Understanding biocides and the latest regulations

Dr Anette Bitsch, Fraunhofer ITEM

Dispersing pigments and fillers – from theory to practice

Frank Kleinsteinberg, Evonik

Functional coatings

Dr Gesa Patzelt, Fraunhofer IFAM

AWARD

WHO IS THE BEST?

ECS Award for the most outstanding conference paper

Every European Coatings Show starts with handing over the prestigious European Coatings Award for the most innovative paper. If you want to know who the winner will be, make sure to attend the plenary session on 13 September.

The ECS Coatings Award 2021 brings with it not only prestige but also EUR 2,000 in prize money and a commemorative trophy sponsored by the European Coatings Journal that will be handed over during the conference plenary session on 13 September. The session is the official opener to the European Coatings Show Conference and will also include a welcome address and the official keynote lecture.

The winner of this award for the best submitted paper is selected by a jury of coatings experts on the basis of rel-



evance, scientific content and degree of innovation.

The European Coatings Show Award 2019 was won by Dr Christopher Miller, Arkema. He submitted a paper describing how to get a deeper under-

standing of the effect of latex design parameters on final coating film properties. He and his colleagues re-examined a number of familiar test protocols and looked at major causes of coatings failures. 

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TRENDS

INNOVATION AND SUSTAINABILITY REMAIN DRIVERS

The pandemic has forced companies to become more inventive and adapt their ways of working



Jan-Piet van Kesteren
Akzo Nobel

The paints and coatings industry has been encountering unprecedented challenges due to the ongoing Covid-19 pandemic. Transportation in particular has been significantly impacted over the last 12 months or so, with the effect of travel bans and lockdown measures on the aerospace, automotive and marine sectors being well documented. But it hasn't all been bad news, as Jan-Piet van Kesteren, Akzo Nobel's Director of decorative paints Europe, Middle East and Africa, explains.

In certain regions, keeping people indoors has resulted in a major upsurge in home improvement. We saw clear evidence of this do-it-yourself (DIY) boom during 2020, especially in Europe, with our decorative paints EMEA business delivering significant growth in revenue, compared with the previous year.

What appears to have happened in these markets is that demand for DIY-related products increased as spend shifted into home improvement from other areas, such as travel. Consumers simply had more time on their hands to upskill. So, people who, in the past, had put off tackling jobs around the house decided to start learning how to do new things. As a result, there was a big rise in online research, with DIY being particularly popular. This in turn opened up a need for brands to provide much more advice and assistance around painting and the use of colour.

Meanwhile, retailers had to rapidly adapt to meet this shift in demand and the huge increases in online transactions. We've even

seen the rise of online-only retailers in the industry. We accelerated our digital marketing and sales, which included the launch of a new web platform and the fast scale-up of our eCommerce activity, particularly in Western Europe. We don't know exactly how much of this change in the marketplace will last, but we anticipate that at least some of these new behaviours will stick. It's clear that people are now comfortable with ordering paint online. And we definitely have more DIYers out there now. These are therefore all encouraging signs for the industry.

INTEGRATED SUSTAINABILITY

We're also seeing the sustainability agenda continue to gather pace, driven by increasing regulations and the attitudes and needs of customers and consumers. It's evident that customers are increasingly looking for products that provide sustainability advantages. They also want to work and partner with companies that operate responsibly.



Source: koyae799 - stock.adobe.com

Having long been committed to doing business sustainably, our new "People. Planet. Paint." approach highlights how sustainability is integrated into everything we do. It's about pioneering a world of possibilities to empower people and reduce our impact on the planet, while consistently innovating to deliver the most sustainable solutions for our customers. It also includes a number of key ambitions, such as securing more than 50% of our revenue from sustainable solutions by 2030. The decorative paints EMEA business is also aiming to use 50% recycled content in its plas-

tic packaging by 2025. In addition, we became the first major manufacturer to launch recycled paint in 2019 with the introduction of "Dulux Trade Evolve" in the UK. The matt white emulsion contains 35% recycled paint.

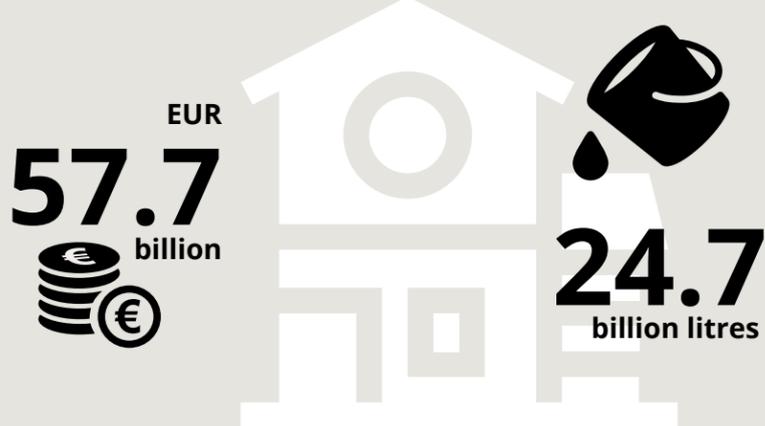
INNOVATION AS DRIVER

Which leads us to another big driver in the industry – innovation. In many ways, the pandemic has forced companies to become more inventive and adapt their ways of working – so innovation has extended well beyond developing actual paint. It's something we've been focusing

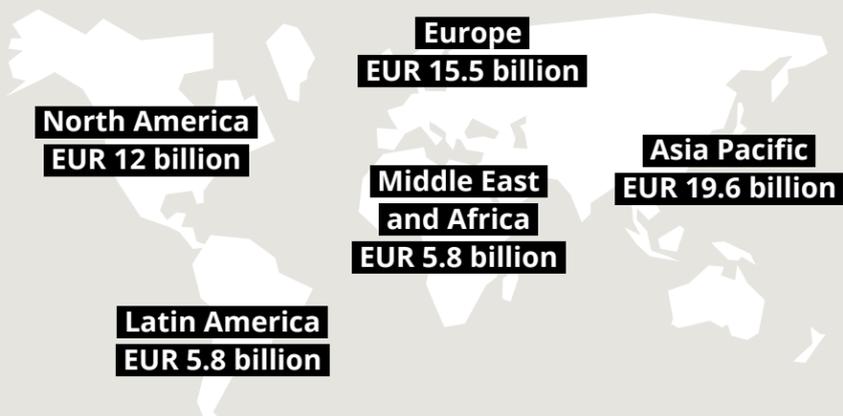
on quite heavily as well. However, it hasn't distracted us from continuing to deliver pioneering products to our customers. Meanwhile, our "Paint the Future" collaborative innovation ecosystem continues to gather pace. It's all about working with start-ups around the world to connect what we know with what we don't yet know, with a view to bringing new solutions to the market faster. So, although market predictions are always fraught with difficulty, all things considered, we feel fairly confident about the health of the paints industry in Europe right now.

ARCHITECTURAL COATINGS MARKET

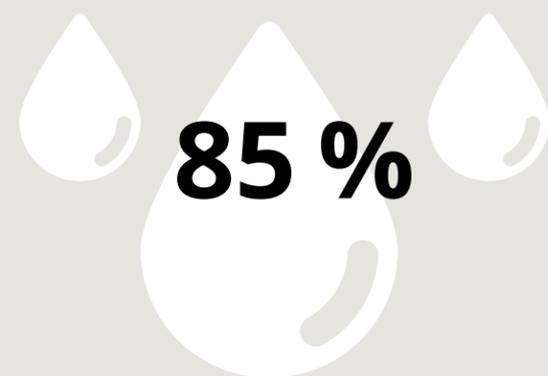
01: Market size



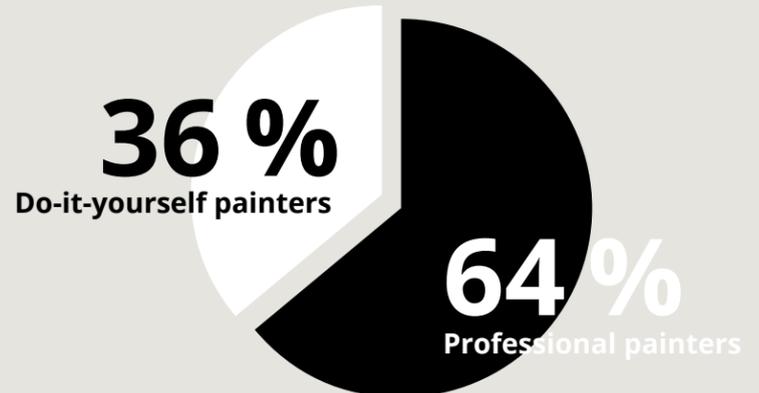
02: Split by region



03: Share of water-borne systems



04: Share of end-users



Source: ChemQuest; Kusumgar, Neriff & Growney



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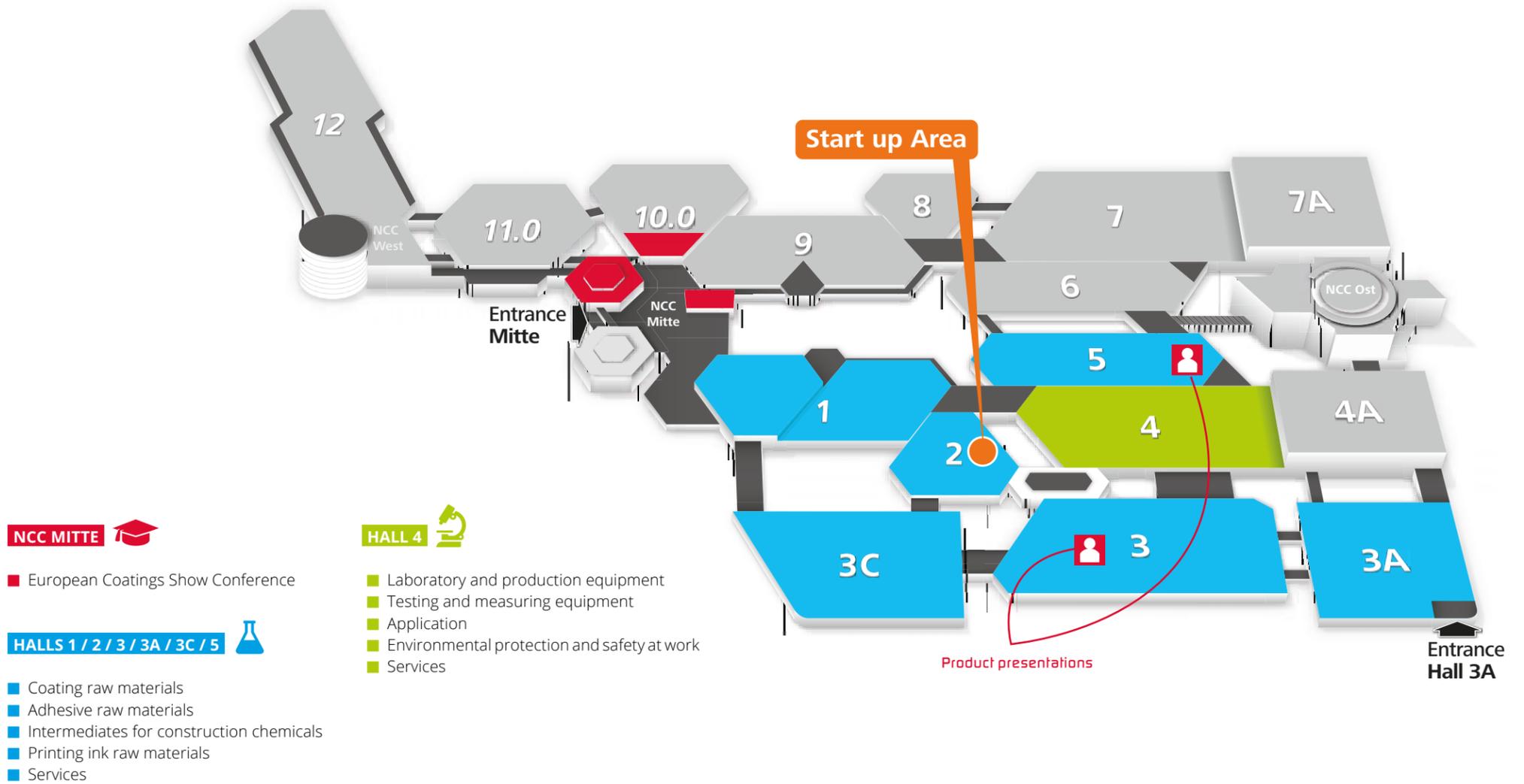
There are many ways to achieve a profitable result. We think the best outcome is when there is a win for everyone involved – the planet included. That is why we are taking collaborative and sustainable steps towards a circular economy. We are leveraging alternative raw materials in our new products and enabling the conversion of waste into resources at the end of life – just a couple of ways that show how we are helping to make the future a better place to be.

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HALL PLAN

FINDING YOUR WAY AROUND THE SHOW

Plenty to see in Nuremberg



RAW MATERIALS

TOWARDS A FOCUS ON RESOURCES

Coatings producers dealing with the current raw materials situation



Dietmar Jost
Kansai Helios Group

The pandemic and huge difficulties in the raw materials market are placing the European coatings industry under enormous pressure. Rising demand, scarce transport resources and several force majeure declarations by raw material suppliers are creating global shortages of key raw materials and spawning all sorts of unprecedented challenges for the whole industry.

All industries are currently facing huge challenges on account of the pandemic and there is a strong link here with the undesirable situation in raw materials. For us as a coatings producer, things are made worse by the fact that our industry's intense reliance on raw materials means that they play a far greater role than in most other industries. Even a small fluctuation on the raw materials market has a massive impact on our production processes.

PROCUREMENT CHALLENGES

At the moment, the whole market is faced with rising demand for raw materials. This situation has mainly come about through forecasts of an economic recovery on one hand and several force majeure declarations by suppliers of key raw materials on the other. This concerns not only epoxy resins, one of

the most important binders for paint production, but also polyester and polyurethane resins, acrylic acids, acrylic resin, UV resins, and solvents and thus all coating and colour segments. In particular, raw materials from Asia are extremely difficult to procure at the moment, and the supply situation in Europe is equally tight. All this is fuelling drastic price increases. Depending on the raw material type, the price hikes range anywhere from 20% to 30%. In some categories, increases in the triple-digit range are even forecast.

EXTREME FREIGHT COSTS

In addition to increases in raw materials prices, the pandemic has led to unforeseen demand in domestic trade. Factory closures and plant accidents have given rise to delivery shortfalls and a global shortage of transport containers. This has led to a shortage of transportation

resources and a dramatic rise in freight costs from Asia to Europe. Within Europe, too, the situation is exacerbated by a shortage of synthetic packaging. This view of the current overall situation might seem pessimistic and the outlook somewhat unpredictable. However, we are confident that things will have stabilised by mid-year.

RELATIONSHIPS ARE KEY

Over the past 100 years, Helios has built up a reliable network of important raw material partners and runs a well-stocked raw materials warehouse. Furthermore, we know we can rely on the strong relationships forged with our partners and customers and we are pursuing our core business by focusing squarely on transparent communications with all stakeholders and on continuous research and development. We are going to great lengths to deal with

present uncertainties as best we can. Naturally, in view of current developments, all manufacturers are being forced to make price adjustments too, so that they can stay productive and maintain the quality of their products, whilst continuing to heavily engage in research and development. We believe it is essential to do our utmost to stay competitive and to contribute to a strong European economy via our production sites spread across Europe. One of our greatest strengths in this regard is our scope for backward integration of raw materials. For more than 50 years, Helios has also been a producer of coating and composite resins. During all this time, we have continually upgraded our production lines and expanded our production capacities. Thus, we are in a position to do our bit to maintain a continuous supply of key raw materials for the production of

coatings by the whole market. Today, more than ever, this makes us a reliable and strong partner for the entire coatings industry.

FOCUS ON ENVIRONMENT AND INNOVATION

Besides coping with the challenges posed by the Covid-19 pandemic, we are keeping a clear focus on environmental priorities. We are striving to improve our environmental performance and build a carbon-neutral future. This applies both to in-house activities and to the development of eco-friendly coating solutions of the highest quality and functionality. Our R&D laboratories rank among the best-equipped facilities worldwide, and this gives us the capability us to further design and develop innovations.

PRODUCT PRESENTATIONS

IN A NUTSHELL

Exhibitors introduce their newest developments



Show visitors will have the opportunity to learn about novel products on the market.

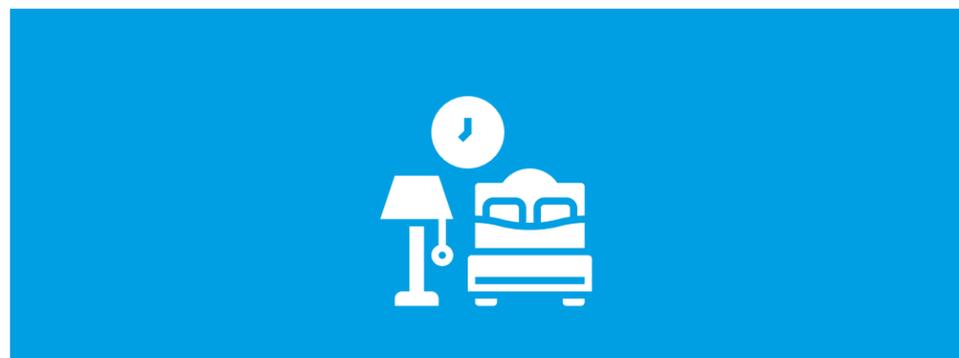
As part of the ECS, visitors will again have the opportunity to learn about novel products on the market. The Product Presentations will be held on all three days of the show and will feature a number of speakers introducing their new products.

The Product Presentations sessions, held in hall 5, stand 5-266, and in hall 3, stand 3-633, are intended to arouse visitors' interest by providing an overview of

novel coating products. Exhibitors queue up to deliver short presentations on their latest offerings. The speakers only have a 15-minute time slot to present information about the development, performance and technology behind their products. Not only will they focus on the new developments themselves, but they will also expound on market trends in their respective areas. After their presentations, they will be available for brief discussions with attendees.

NO ADMISSION AND REGISTRATION NECESSARY

There is no admission charge to the Product Presentations, and ECS visitors are free to drop by at any time – registration is not necessary. An overview of the presentations will be posted shortly afterwards on the European Coatings Show website. Exhibition visitors will also be able to access them online after the exhibition.



ACCOMMODATION

Even before the corona pandemic, hotels had already had strict cleanliness and hygiene regulations in place, which were revised again in these challenging times to ensure even better compliance. Many hotels have published these adapted hygiene concepts on their websites.

An overview of the hotels with their individual hygiene concepts can be found here:

www.bit.ly/3xNR5a4

For further booking options please visit:

www.european-coatings-show.com/accommodation

www.tourismus.nuernberg.de/en/

Innovative and sustainable liquid and solid solutions for Decorative Tinting

www.chromaflo.com

Please visit us at ECS to learn how we can help you grow: Hall 3C, Stand number 3C-126

At ECS 2021, Chromaflo will introduce their next generation tinting solutions by featuring their state-of-the-art, next generation POS liquid colorants and also their Pearls line, a unique solid tinting system that is volumetrically dosable. Benefits to the customer from either technology include no or very low biocide additions, the lowest possible impact on paint properties, improved dispensing-behavior and excellent color accuracy.

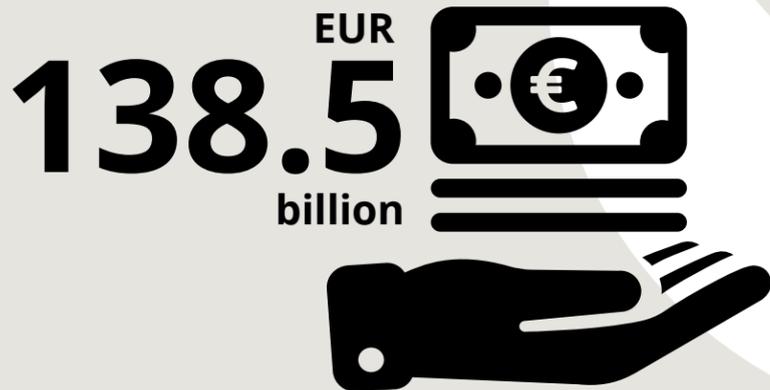


Advanced colorant systems, delivered globally

Source: ChemQuest Group

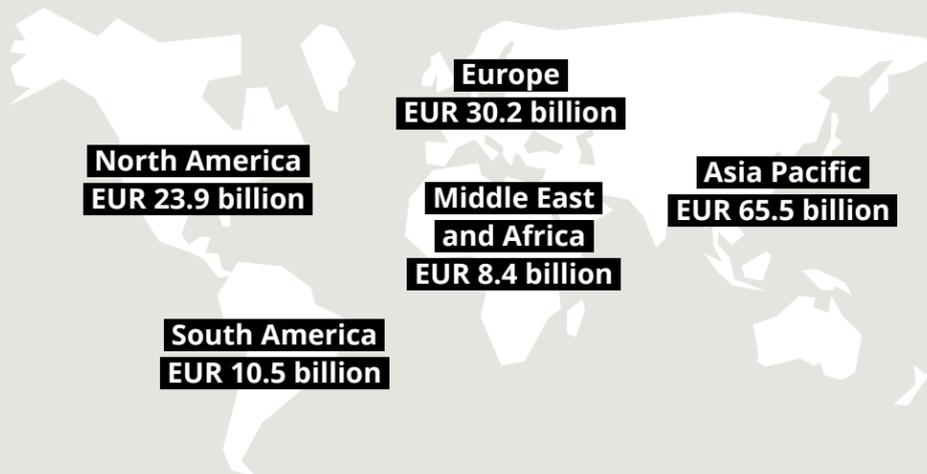
THE GLOBAL PAINT AND COATINGS MARKET

01: Market size

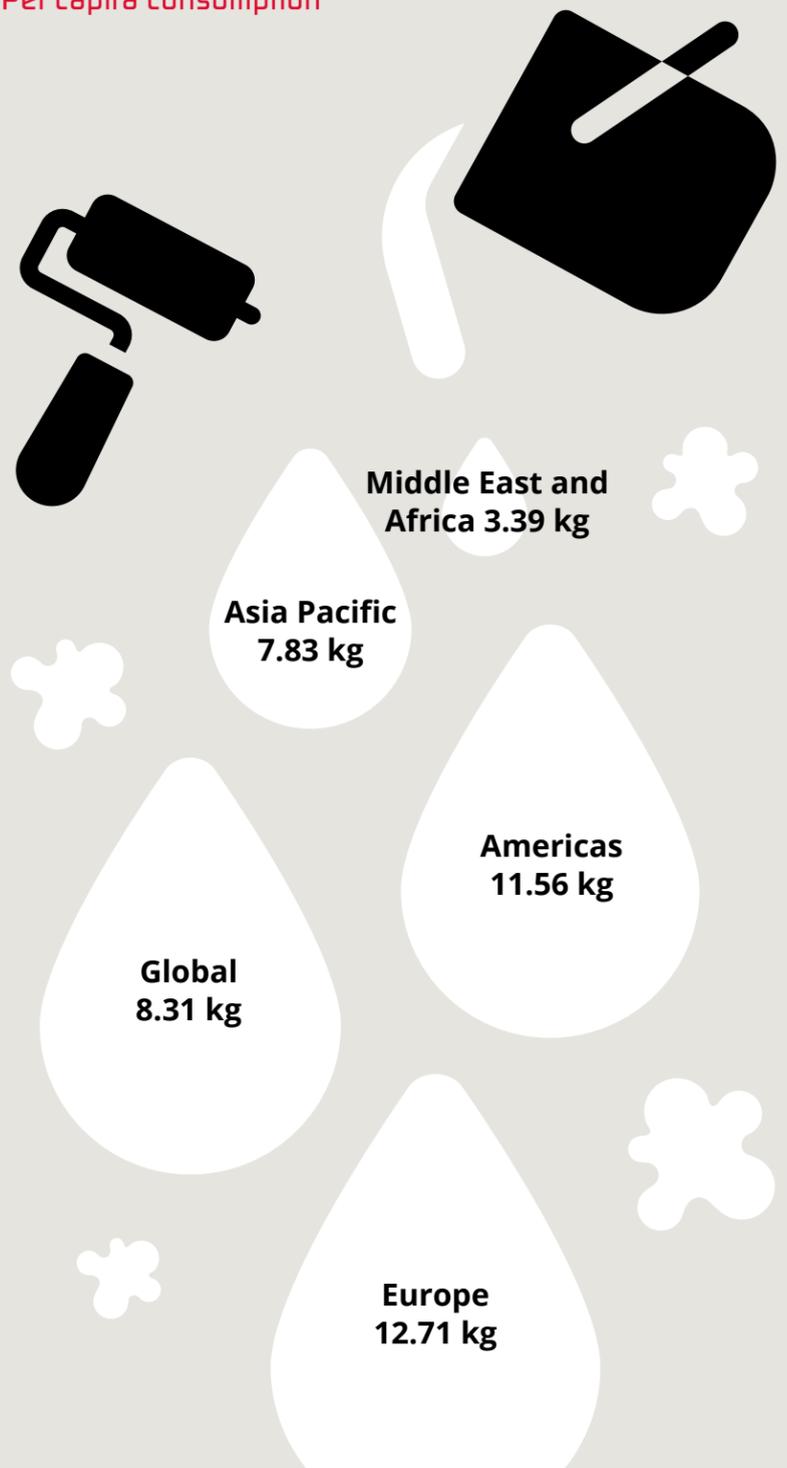


46.4
billion litres

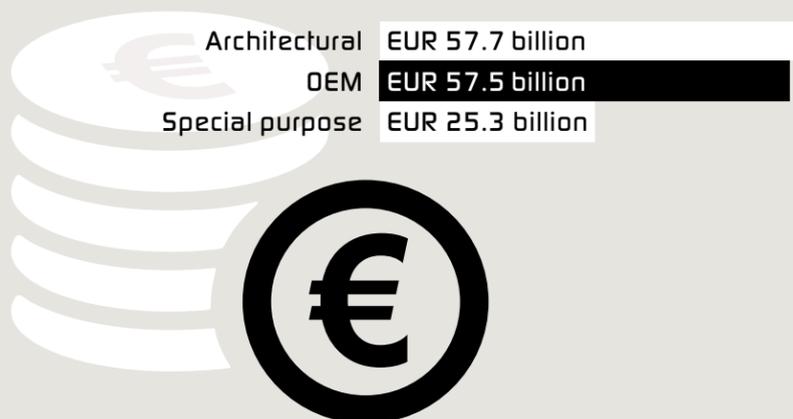
02: Split by region



04: Per capita consumption



03: Split by segments



AT A GLANCE: TICKETS AND OPENING HOURS

European Coatings Show: 14-16 September 2021

Opening hours

| | |
|------------------------|----------------|
| Tuesday and Wednesday: | 9.00 - 18.00 h |
| Thursday: | 9.00 - 17.00 h |

Exhibition entrance tickets

| | |
|------------------|--------|
| 1-day ticket | 60 EUR |
| Permanent ticket | 80 EUR |

Visitor tickets obtained in advance are automatically allocated a free VGN (Greater Nuremberg Area Transport Authority) combined ticket enabling you to use all public transport in the Nuremberg/Fürth/Stein area free of charge. Free admission for trainees and students from the coatings industry on presentation of suitable proof. Visitor registration should be made in advance if possible. However, tickets may also be purchased on-site. Guest tickets can only be redeemed online.

Online ticket shop

Entrance tickets can be ordered via the internet:
www.european-coatings-show.com/tickets

Visitor information

NürnbergMesse GmbH
T +49 911 8606-4900, Fax +49 911 8606-4901
visitorservice@nuernbergmesse.de

European Coatings Show Conference: 13-14 September 2021

Opening hours

| | |
|-----------------------------------|-----------------|
| Sunday (Pre-conference tutorials) | 15.00 - 18.30 h |
| Monday | 8.30 - 19.30 h |
| Tuesday | 9.00 - 17.00 h |

Registration fees (early bird available until 2 August 2021)

| | |
|--------------------------|-----------|
| Early bird standard fee | 1,460 EUR |
| Standard fee | 1,560 EUR |
| Early bird exhibitor fee | 1,320 EUR |
| Exhibitor fee | 1,400 EUR |
| Academia | 730 EUR |
| Conference speaker | 425 EUR |
| Speaker university | 0 EUR |
| Student* | 0 EUR |

*full-time students only, students who fail to turn up without notifying the organiser will be liable to pay a penalty of 200 EUR
The content of the lectures as well as the ticket prices are equal on-site and in the live stream.

| | |
|------------------------------------|---------|
| Single-day pass, 13 September 2021 | 950 EUR |
| Single-day pass, 14 September 2021 | 950 EUR |

| | |
|--|---------|
| Pre-conference tutorials 12 September 2021, 15:00-18:30 h | 495 EUR |
|--|---------|

Register online:

www.european-coatings.com/events/2021/ecs-conference-2021

Discounts: Companies exhibiting at the European Coatings Show 2021 or members of EuPIA and PRA will be given a 10 % discount of the standard fee

Fees include

- Admittance to the conference day booked
- Conference proceedings
- List of attendees
- Luncheon & coffee breaks
- Permanent exhibition ticket
- After work reception
- Welcome get-together

Information on the conference:

Moritz Schürmeyer
Vincentz Network
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SUSTAINABILITY

STILL IN THE NICHE, BUT GROWING

Bio-based systems are demanded, but it will take more time until they expand their share in the market

Industry experts, such as from Chem Quest and Orr & Boss, estimate that bio-based systems account for some 5 % in value and slightly more than 1 % in volume of the total paints and coatings market. Nevertheless, industry experts from Akzo Nobel, Covestro and PPG Industries are expecting further opportunities for these systems. The insiders share their views on the current situation and provide an outlook for this niche segment.

Mary Ellen Shivevts of PPG agrees to these numbers. "Bio-based coatings are an emerging market with approximately 5 % market share," she says. Even though this segment only holds a niche share, it is not neglected by the industry. With rising ecological concerns and increasing consumer awareness for eco-friendly products, bio-based systems are believed to play a larger role in the future. Markus Mechtel of Covestro describes the market for bio-based paints and coatings as follows: "More and more companies along the value chains want to develop solutions to global challenges such as climate change and scarce resources and are committed to the 17 Sustainable Development Goals of the United Nations. Likewise, an increasing number of consumers are asking for more sustainable products, also in terms of their origin." For Shivevts, bio-based coatings are one of many ways manufacturers can deliver sustainable benefits within the paint sector. In this regard she believes, the bio-based market poses a unique opportunity within the paint industry.

Berta Vega Sánchez of Covestro sees good growth potential for the use of bio-based coatings in general, both in terms of market share and of opening up further applications and industries. The driving forces are an increasing environmental awareness, climate plans like the EU Green Deal and the ongoing transition to the circular economy. "The bright opportunities for bio-based coatings are in high-value applications and value chains driven by downstream players, such as brand owners with strong sustainability poli-

terials without compromising performance. While there are a relatively small number of bio-based paints and coatings within the current market, further research and development will allow greater understanding of bio-based materials and their performance," Shivevts says. As the market for these coatings is still rather small and as their production – as well as the production of the respective raw materials – is more complex and costlier than that of conventional products, they are still more expensive, Sánchez explains.

"More and more companies along the value chains want to develop solutions to global challenges."

Markus Mechtel, Covestro

ties, like the automotive, furniture and packaging industries," explains Sánchez. "However, in highly fragmented conservative markets like protective coatings, with high industry standards in terms of weather resistance, it might take longer to introduce new products and expand the use of renewable raw materials," she adds.

MORE R&D WORK IS NEEDED

For Shivevts all markets within the paints and coatings industry are open to the possibility of bio-based coatings alternatives, however, on some segments, additional research and development work is needed to ensure product performance. "Our customers oftentimes expect the same quality products through plant-based ma-

"The industry is already working on a second generation of biomass, derived from biowaste and cellulose. Both materials are available in huge quantities. This will further broaden the portfolio of bio-based materials, however, intensive research work is still needed here, since the extraction of suitable raw materials from second-generation biomass is much more complex – also in terms of the energy required – than is the case with first-generation biomass." Akzo Nobel is exploring the use of bio-based ingredients as an alternative to the fossil-based economy in both the paints and coatings market segments. "When it comes to reducing the carbon footprint of our products, we use both bio-based materials and materials containing recycled content. Since bio-



Source: lovelyday12 - stock.adobe.com

based ingredients still resemble oil-based chemical ingredients, simply finding ways to use them isn't our goal as such", an Akzo Nobel spokesperson says.

COSTS AND PRODUCT PERFORMANCE ARE CRUCIAL

The company's approach takes into consideration some of the challenges that come with the use of bio-based ingredients. "Customer research confirms that while there is openness to consider bio-based, lower carbon footprint solutions, only few customers are prepared to pay more or sacrifice on quality for them. The costs of making bio-based raw materials are often still higher than conventional raw materials and can still be a challenge to match product performance. We also don't

A similar view is shared by Shivevts: "When developing bio-based coatings for our customers two of the main challenges are consistent raw material availability at an affordable cost, and performance. The switch to plant-based materials must not result in any compromise in functionality of the paint, which can present a challenge for paint manufacturers to maintain standards."

INDUSTRY WORKS ON PROJECTS

Even though these challenges and hurdles are existing, the industry experts are convinced to tackle the tasks. Mechtel is convinced that a future production of larger volumes (economy of scale) will lead to an adjustment of prices, so that the renewable

solutions, the implementation of circular products into paint production is also hassle-free with the same processing conditions at no additional risk," Mechtel explains.

There are many aspects for Shivevts that will influence the move to bio-based coatings, including regulation, customer needs and the industry's continued focus on sustainability. "Coatings manufacturers must be willing to invest in innovation and exploration of renewable resources in order to proactively develop high performing bio-based products," she says. Akzo Nobel recently announced a bio-based innovation developed in collaboration with the Dutch Advanced Research Center Chemical Building Blocks Consortium. It is a completely new technology that is able to cure chemicals for paints. "This breakthrough – which uses bio-based monomers and requires just UV light, oxygen and renewable raw materials – is a more sustainable way of making resins. We are on the verge of progressing to the next level of coatings technology, thanks to this example of collaborative innovation in action. We are opening up a new future for paints and coatings by using sustainable building blocks that will enable us to explore and develop some really exciting functionalities for our customers," the Akzo Nobel spokesperson says. Nevertheless, the Dutch coatings manufacturer points out that the company still has got a long way to go in terms of exploring the scope of the technology, but it will almost certainly define the future of their products.

"Further research and development will allow greater understanding of bio-based materials and their performance."

Mary Ellen Shivevts, PPG

want our bio-based ingredients to compete with the food chain. And finally, we see that not all suppliers of bio-based materials can supply the full LCA data needed to support any product claims." Sánchez also sees the performance as crucial: "Bio-based polyurethane coatings and raw materials used therefore must achieve the same high level of quality as petrochemical-based products or even exceed it."

products will be available at lower costs. "This is especially crucial for new molecules (near drop-ins) that need to compete in price with well-established petrochemicals. On the other hand, for drop-in building blocks, mass-balancing is a faster way to integrate bio-based feedstock in the value chain without the need to make large investments and/or adjustments in upstream infrastructure and processes. With mass-balanced drop-in



Source: Stockwerk-Fotodesign - stock.adobe.com

DIGITISATION

“REMOVING THE TEDIOUS PROCESS OF TESTING OUT ASSUMPTIONS”

Digital tools can improve the development of new coatings formulations

Digital tools offer more and more ways to improve the development of coatings. One way utilises digital prototypes to help reduce the number of redundant trial-and-error lab tests. Jurjen van Rees, Commercial Director, COO of Rheo Cube, a Dutch start-up specialised in simulation software explains how this works.

In what way can virtual prototyping of rheology help to improve R&D in coatings laboratories? In recent years, a major paradigm shift has occurred in R&D departments throughout the coatings industry. There's been a clear move away from repetitive wet lab experiments, as scientists and industry leading companies gravitate towards a digital environment. The timing of this shift is perfect. Simulation modelling and computing power have now

reached a tipping point, creating new opportunities for experimental scientists. These opportunities are being further driven by the pandemic and digital transformation over the last 12 months. Experimental scientists can now transfer manual processes to a virtual lab environment, accelerating trial-and-error and removing the tedious process of testing out assumptions in their day-to-day research. Take the example of developing a rheology modifier to help a coatings product perform better on horizontal surfaces. Lab-based trial-and-error iterations offer a limited set of answers that are based on assumptions made while the formulation is being developed. Imagine being able to confirm or reject those assumptions in a virtual lab or being able to look deeply into a product's materials. You could truly discover what's happening inside a formulation and answer certain

questions for the first time. How are surfactants behaving around particles? How are they impacting your rheology modifier? Today's state-of-the-art virtual prototyping software, RheoCube, brings experimental scientists that kind of capability. Compared to a regular rheometer, virtual prototyping empowers users to, for example look inside a sample of a material to see individual ingredient behaviour. This look allows them to see where surfactants and particles go and to look at forces acting on and applied by ingredients. Further they can understand aggregation and how particles stick. They understand strange flow curves – by simply turning effects on and off and see if they are caused by sedimentation, diffusion or/and aggregation. In this way they overcome issues in replacing ingredients – by testing compatibility in simplified systems.

Simulation has come a long way in recent years. What further advances do you expect in the coming years? For simulations on the meso-scale, we are on the cusp of some big technological developments. We've not yet reached the limit of what an internet browser can handle. Imagine being able to pause a simulation, tweak parameters in the formulation and continue experimenting? There's huge potential to dive deeper into the behaviour of particles, surfactants and polymers. This kind of futuristic technology is seen in our system. It's the first software to become available for experimental scientists, as opposed to specialised software that requires coding skills, or maybe a PhD in computational or polymer physics. It's also unique in offering insights on the meso-scale physical behaviour of systems (individual components), with only minimal data input. The software



offers on-demand computing, and the most comprehensive digital data analysis and visualisation module available on the market right now.

Your company is offering simulations as a service. Are companies not hesitant to outsource valuable research information? Information sharing is not a big impediment with us. Companies using this software

don't outsource any valuable information, so this doesn't hamper our new client procurement processes. The software environment provided is unique to each licence user. Without their approval, even our own support scientists cannot access their account, or the information within it. The level of security offered meets the highest standards and we expect additional formal certification of this in 2021.

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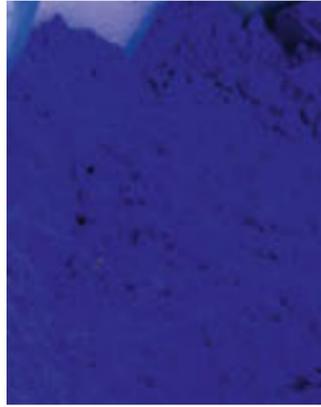
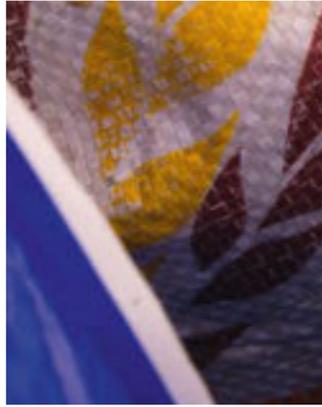
Source: Nikolai Link - stock.adobe.com



COLOURFUL
Thousands of years ago people already liked to wear colourful clothes. This is what A. Kramell et al. found out in their study. People used colours from the animal and plant kingdoms for this purpose.



BLUE WAS POPULAR
With the help of modern imaging mass spectrometry, the scientists have succeeded in depicting dye compositions in historical textile samples as distributional images. For example, they can detect indigo dyes.



RAW MATERIALS

“ADDITIVES NEED TO BE HIGHLY VERSATILE”

Market trends and challenges

One of the most decisive drivers for innovation and change in the coatings industry is the topic of sustainability, including the field of additives, says Dr Gaetano Blanda. Evonik's Coating Additives Business Line Leader provides insights into the market.

How would you describe the current situation on the market? The first half of 2020 was a very challenging market environment and dynamic, and hit some key industries hard, such as automotive. From the second half on, especially in Q4 2020, soft signs of recovery started to emerge. All in all, we estimated that the global additives market shrank by around 4%. Despite positive momentum and the signs of recovery, there is a lot of uncertainty in the market. Nevertheless, we in the Business Line Coating Additives at Evonik are optimistic for 2021. We did our homework for 2021 by focusing on customer intimacy, innova-



Dr Gaetano Blanda
Evonik

tion and digital transformation. The major challenge for 2021 will be availability of raw materials, packaging and shipping capacity.

Which technical trends will influence the market in the next few years?

One of the largest and most crucial drivers of innovation and change in the coatings and inks industry is sustainability. There is a strong focus on regulatory aspects, bio-based raw materials and life cycle analysis. Numerous new raw materials are being

launched and formulated. There is therefore a need for the right additives that comply with numerous regulations, eco-labels and/or do not pose any risk when in contact with food. Also in focus are additives and co-binders that have a high content of biore-

newables. And last but not least, new tailored additives are needed that facilitate the use of this new generation of coatings and inks raw materials.

What is the current status of multi-functional additives

and do you see potential here? Another strong trend in the coatings and inks industry is the streamlining of raw materials. Large companies are striving to reduce complexity and thus lower the number of raw materials employed. Additives need to be highly versatile. Ideally, one additive will provide several desired effects at the same time (e.g. foam prevention, flow, and substrate wetting). Such multifunctional additives will gain even more importance in the years to come. ☑

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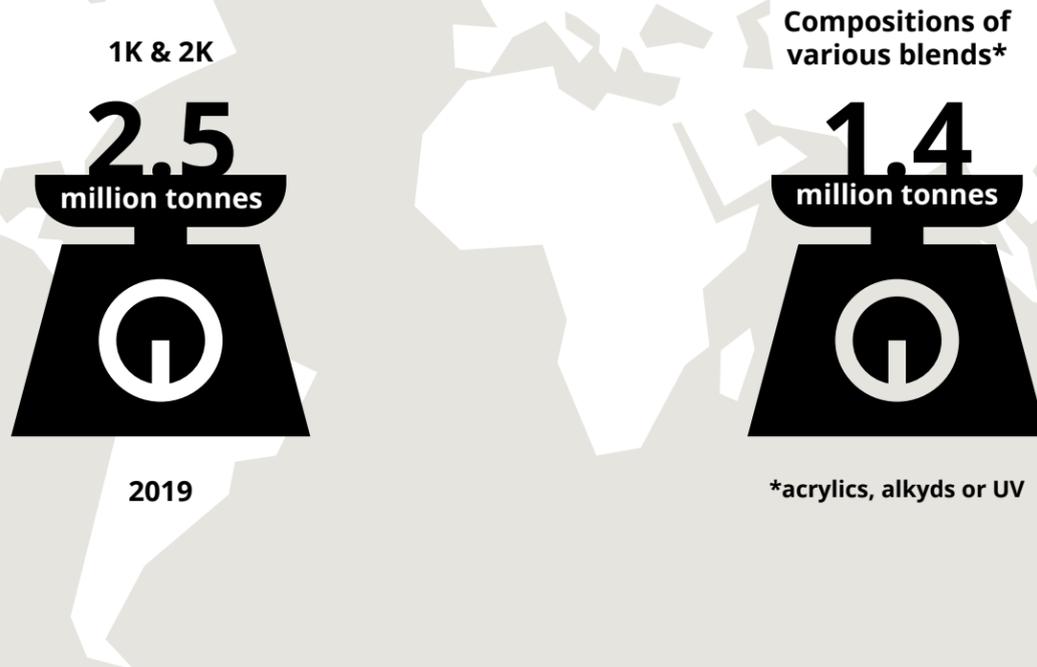


INFORMATION ABOUT TOPICS AND DATES ARE AVAILABLE AT WWW.EUROPEAN-COATINGS.COM/SHORTCOURSES

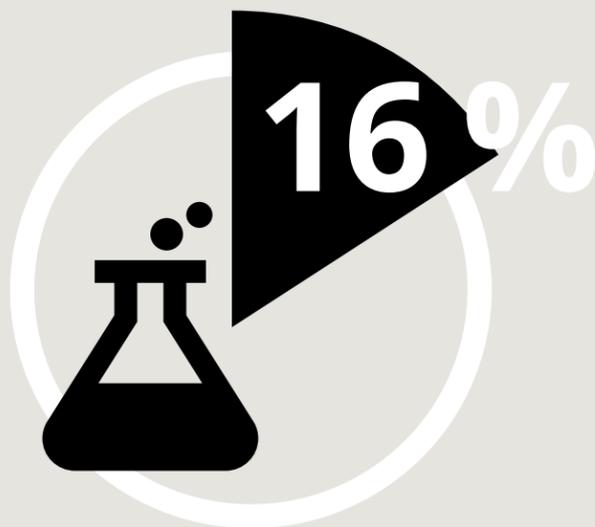
Source: Freepik - www.flaticon.com

POLYURETHANE COATINGS

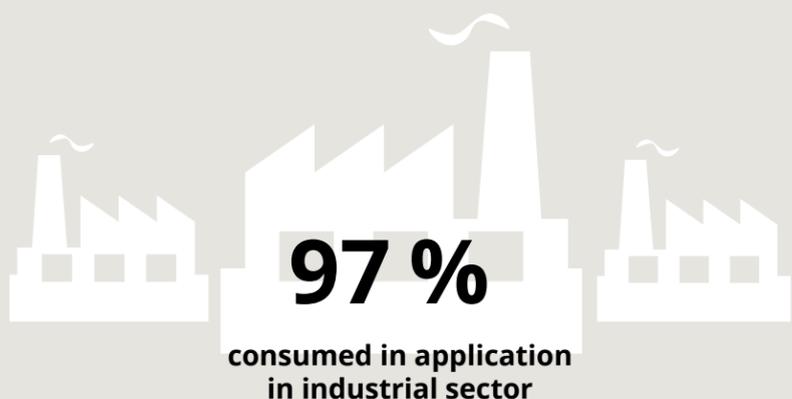
01: Market size



02: Share of PU technology in the global mix of coatings volume by chemistry

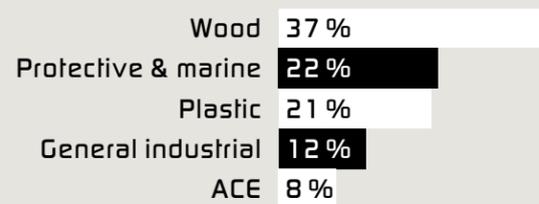


03: PU consumption

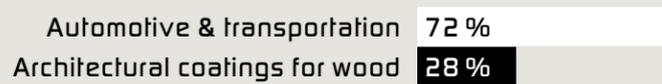


04: Share of PU coatings by sector

1K & 2K PU coatings by sector



Acrylics/polyurethane blends



05: Global share of PU coatings by technology

| 2019 | SB | WB | Powder |
|------------|-----|-----|--------|
| PU | 87% | 12% | 1% |
| PU blends* | 56% | 44% | n/a |

*Blends include acrylic/PU, acrylic/PUD, alkyd/PUD, acrylic/alkyd/PUD, UV/PUD, polyester/PU

PIGMENTS

“INDUSTRY SEES OPPORTUNITIES FOR TITANIUM DIOXIDE IN COVID-19 RECOVERY”

The challenges are significant, but the European Green Deal also brings new opportunities for TiO₂



Dr David Lockley
Venator

Dr David Lockley of Venator talks about dominant trends and the challenges facing the titanium dioxide sector.

How will the classification of titanium dioxide affect the industry in the coming years?

The TiO₂ industry continues to diligently prepare for the 1 October 2021 compliance date of the EU's classification of certain TiO₂ powder as a suspected carcinogen by inhalation. Whilst there is still legal uncertainty regarding how the classification applies, we are confident about our readiness to meet this deadline. It is important to stress that there is no scientific evidence of cancer in humans from exposure to titanium dioxide. The classification is exclusively based on decades-old rat inhalation study data, which industry believes is of questionable reliability. Venator, together

with other TiO₂ producers in the Titanium Dioxide Manufacturers Association (TDMA), have been very active in developing practical steps to ensure compliance, despite uncertainties in the application of the regulation, and have been collecting data to support its product-classification decisions. The industry continues to disagree with the scientific and legal basis for the classification. Three legal challenge cases are currently pending in the EU Court of Justice seeking to annul the classification. Decisions in those cases are not expected before 2022. The TDMA will continue to communicate information to and collaborate with downstream users of TiO₂. The latest information is available in the news section on TDMA.info.

From your point of view, what trends will dominate the TiO₂

segment in the near future?

The Covid-19 economic recovery will no doubt be a major trend for the titanium dioxide sector. The EU, UK and the US are all looking to make investments in construction or infrastructure which could drive growth in many pigmentary applications of TiO₂. For instance, the EU launched its renovation wave strategy with the aim of doubling the renovation rate of residential buildings by 2030 whilst promoting the resource and energy efficiency of buildings across their lifecycle. TiO₂ which is an important ingredient in paints and many construction materials, is a critical component in these projects due to its durability and sustainability. The unique properties of TiO₂ pigment help to maintain the quality of products for longer. In coatings like paints, it enhances the durability of construction products through its re-

sistance to heat, light and weathering. This means there can be less need to replace construction materials or renovate buildings. The use of TiO₂ as an 'intelligent material' is another trend that is gathering momentum. By altering the physical characteristics of the TiO₂ we produce, we can extend functionality beyond conventional pigmentary properties. There is an increased interest in the potential of TiO₂ in hygienic coatings as a result of Covid-19.

Apart from the legislative issues, what are the major challenges facing TiO₂ producers? The objective of the European Green Deal to make the EU a climate-neutral and circular economy by 2050, presents major challenges and opportunities for all sectors in Europe, including the TiO₂ industry. It requires the decarbonisation of industrial

processes with a need to find solutions at an unprecedented scale. Venator is actively developing strategies for the decarbonisation of our facilities and has recently signed a Memorandum of Understanding with BP to explore the integration of clean hydrogen into our UK operations at Teesside. The challenges are significant, but the European Green Deal also brings new opportunities for TiO₂ – such as the renovation wave mentioned before. Notably, TiO₂ makes products more sustainable across the lifecycle. It is more effective than alternatives and enhances durability via its protective properties, meaning that fewer resources are needed in a circular economy. Simply put, TiO₂ is a substance that is fit for the EU's vision of a safe and sustainable chemical. 



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Are you planning to attend the European Coatings Show as a visitor? The website is packed with information, facts and figures on the show and conference. Plus, there is plenty of information on tickets, along with tips on accommodation and travel. Moreover, exhibitors will also find everything they need to

know before the show.

For more information, please visit: www.european-coatings-show.com.

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Another great resource is the official European Coatings Show app. This free app contains a complete list of exhibitors as well as a digital map of the locations of the stands. What is more, the app's search function allows you to browse by exhibitor and product.

FOR THE CONFERENCE

Are you attending the European Coatings Show Conference? The app will be a great help here to you as well, as it contains a digital timetable for the conference. It also allows you to browse all the abstracts and to put together your own personal conference agenda. The app is free of charge and available for download to iPhones, iPads, and Android devices.



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TRAVEL INFORMATION

GETTING THERE

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Nuremberg has always been a central transport hub in Europe. You can get there by train, plane or car – take your pick.

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Travel comfortably by rail: fast trains such as the ICE, IC and EC regularly call at the centrally located Nuremberg Central Station. Your journey from the central station to the exhibition centre: From the Central Station, the U1 underground line towards Langwasser-Süd gets you to the “Messe” station in eight minutes. You can easily call up these and all other local transport connections to the Nuremberg exhibition centre by visiting: www.vgn.de/en/getting-around/exhibition-center/ For current developments and measures due to the coronavirus, please visit: www.vag.de/en/timetable/coronavirus-informations-for-our-passengers/

BY CAR

From the motorways A3, A6, A9 and A73, a well-developed network of feeder roads will take you straight to the exhibition centre. Simply enter the special destination “Messe” or the address “Karl-Schönleben-Strasse, 90471 Nürnberg” into your navigation system. There are plenty of parking spaces available. An integrated parking-space management system responds dynamically to requirements and the current parking situation.

BY PLANE

The Albrecht Dürer Airport Nuremberg is among the best airports in Germany. Frequent fliers value the fast processing, the short distances and good transport connections to the city centre and the Nuremberg exhibition centre. Your journey from the airport to the exhibition centre:



Source: Sergey - stock.adobe.com

By public transport (journey time approx. 25 minutes): The U2 underground line towards Röthenbach takes you directly from the terminal to Nuremberg Central Station. From there, you can take the U1 underground line towards Langwasser-Süd and get out at “Messe”.



FURTHER INFORMATION

Important information for flight passengers can be found here:
www.airport-nuernberg.de/rules-of-conduct

In addition, the latest information for travellers can be found on the official websites of

The German Foreign Ministry of Health
www.bundesgesundheitsministerium.de

The German Federal Foreign Office
www.auswaertiges-amt.de/en/einreiseundaufenthalt/coronavirus



Airport Nuernberg



German Foreign Ministry of Health



German Federal Foreign Office

The Leading Coatings Shows



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www.european-coatings-show.com



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www.abrafati.com.br



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www.paintindia.in



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www.american-coatings-show.com



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www.european-coatings-show.com/reloaded/info



SIGHTSEEING

NUREMBERG IMPRESSIONS

The second largest city in Bavaria is full of attractions

Even though Nuremberg is the second largest city in Bavaria with more than half a million inhabitants, you can easily forget how large the city is when the picturesque Old Town is right in front of you.

The Kaiserburg castle and the famous painter Albrecht Dürer are inex-

tricably linked with Nuremberg, but there are many other attractive sights to discover: the picturesque Old Town with its historic building ensembles, the imposing Old Town churches and romantic winding alleys, the deeply hidden rock passages as well as the famous St. John's Cemetery or the Nuremberg Zoo. On this page we can only show you a small selection of sights.

CORONAVIRUS INFORMATION:

During the ECS, some of the many Nuremberg attractions may still be closed. For up-to-date information on opening hours, contact restrictions and general information, please visit: www.tourismus.nuernberg.de/en/

Source: Uwe Niklas



The Albrecht Dürer House in Nuremberg.



Source: Christine Dierenbach

The Blue Salon at the Nuremberg Zoo.



Source: Thomas Kuebler

The historic streetcar depot Nuremberg.

Source: Uwe Niklas



Nuremberg former wine depot - Weinstadel.

Source: Birgit Fuder



Three in a bun - the popular Nuremberg sausages.

Source: Christine Dierenbach



The museum for industrial culture.

Source: Ralf Schedlbauer



The Kaiserburg castle.

Source: Birgit Fuder



International contemporary art in the Kunsthalle Nuremberg.

BIO-BASED COATINGS

“THE GREEN DEAL HAS ADDED NEW IMPETUS”

Bio-based coatings are expected to play a larger role in the industry's effort to become more sustainable

Dickon Purvis, responsible for regional marketing of coatings, adhesives, and specialties in EMEA and Latin America at Covestro explains where he sees potential and what hurdles need to be overcome.

For what kind of applications do you see the largest potential for bio-based coatings in both the short and long terms?

Covestro is committed to becoming fully circular, so our goal is to create circular solutions for every application; coating solutions based on renewable feedstocks are a key part of that vision and also underline our commitment to achieving the UN Sustainability Development Goals. This focus is further strengthened by our recent acquisition of the Resins & Functional Materials business unit of Royal DSM. By doing so, we have expanded our portfolio of sustainable coating raw materials, primarily with additional water-borne products as well as raw materials for more sustainable powder and UV-curable coatings. Currently, the automotive industry and certain industrial coatings sectors are leading the charge for bio-based coatings. However, even in segments where the need for coatings from alternative feedstocks is less keenly felt, we expect that demand will grow in the coming years.

From your point of view as raw materials supplier, what are the main hurdles to overcome for bio-based products to get into the market? The challenges that suppliers face in trying to promote partially renewable materials in the market are threefold. The first

is the perceived value of coatings based on alternative feedstocks; there is a strong expectation that renewable solutions should be similarly priced despite the additional costs and consumer benefits that such solutions offer. The second is the requirement imposed by customers to show that the partially renewable feedstocks genuinely come with improved sustainability over the whole product life cycle. In this respect, some research needs to be done on improving the biodegradability of products which are likely to be exposed to waste water after use. The third and final challenge is that of market need; those industries whose key players have defined their own circularity targets have experienced faster take-up in the sector as a whole. Where that is not yet the case, take-up is noticeably weaker. However, legislation, such as the European Green Deal, has added new impetus, even in more traditional industries.

Bio-based is not automatically sustainable. How do you ensure that your products are derived from sustainable feedstocks? We are well aware that alternative raw materials, such as partially bio-based – and, in the future, waste-based products – require more attention to be paid to their sourcing than those produced entirely from petrochemical feedstocks. Covestro regards adherence to sustainability standards within the supply chain as a crucial factor in value creation and also an important lever for minimising risks. For this reason, our company sets not only economic standards but also social, ethical and ecological standards. These standards also



Dickon Purvis
Covestro

apply to the supply chain for bio-based raw materials. The extraction of biomass as well as the production of bio-based materials made from them must be done in an environmentally and socially responsible manner. It all starts with the selection of biomass; while first-generation biomass, such as glucose from sugar cane or corn, is readily available at competitive prices, a second generation of biomass feedstock from waste materials, such as lignin, is currently being developed, with the aim of implementing more cost-efficient and responsible production technologies. Another key success factor for the market acceptance of bio-based materials is collaboration along the value chain. In the future, we also intend to introduce mass balancing for bio-based raw materials for which third-party certification of the full supply chain, including Covestro, is mandatory and will create transparency. We are currently working on obtaining ISCC Plus certification, which we also request from our suppliers of bio-based products. A certified supply chain ensures high sustainability standards for our raw materials with regard to ecological and social issues.

Masthead

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ELECTROCOAT

by Michael Brüggemann and Anja Rach

Electrophoretic paints, commonly known as electrocoat or -paint, are organic coatings dispersed in water, carrying an electric charge. This enables the paint for deposition onto a metal, which is carrying the opposite charge. Resulting from this special way of application are special needs for formulating its coating: This textbook shows requirements and particularities for the electrocoat process and its troubleshooting. It illustrates the theoretical basics of electro-deposition, paint formulation, manufacturing, application process in addition to failures and countermeasures of the electrocoat process. Newcomers and practitioners alike get a comprehensive overview over the wide field of electrocoats as well as deeper insights into this technology.

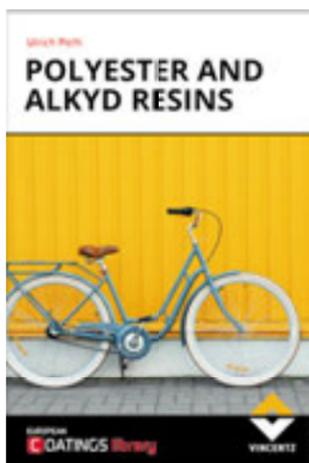


PAINT ANALYSIS

by Roger Dietrich
2nd Revised Edition

Surface coatings are supposed to protect and decorate - but where do coating defects, such as wetting or adhesion problems, come from? The book Paint Analysis illustrates in a clear manner the path of clarification from the detection of a defect to the identification of its cause and enables the reader to develop his own solution strategies. In addition to numerous case studies, the author presents routine applications of service laboratories and adapted process developments. Instrumental Paint Analysis serves as a textbook for application technicians and students who want to learn more about the background of the methods and their performance limits, and also provides experienced laboratory managers with ideas for new ways of analysis!

Just released!



POLYESTER AND ALKYD RESINS

by Ulrich Poth

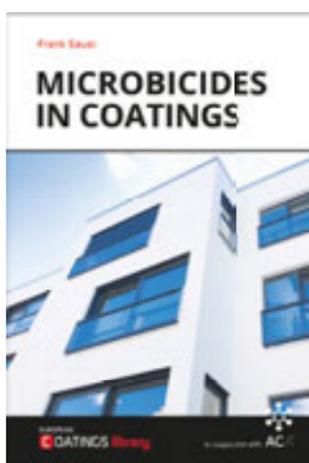
Polyester and alkyd resins belong to the most diverse and important material classes of paint chemistry and their usage as binders has been established for a long time. This standard work goes into detail on the composition, structure and properties of these important binder groups and subjects previous findings in that field to a critical review. It shows different precise calculation approaches in modern coatings development, ways to formulate polyester and alkyd resins in experimental designs and how to vary them systematically. A practice- and future-oriented reference book that should not be missing in any laboratory!



THE RHEOLOGY HANDBOOK

by Thomas Mezger
5th Edition

Already in its 5th edition, this standard work describes the principles of rheology clearly, vividly and in practical terms. The book includes the rheology of additives in waterborne dispersions and surfactant systems. Not only it is a great reference book, it can also serve as a textbook for studying the theory behind the methods. The practical use of rheology is presented in the areas quality control, production and application, chemical and mechanical engineering, materials science and industrial research and development. After reading this book, the reader should be able to perform tests with rotational and oscillatory rheometers and interpret the results correctly.



MICROBICIDES IN COATINGS

by Frank Sauer

All about biocides for coatings: When it comes to protecting coatings, it is essential to strike the right balance between controlling germs in order to avoid economic damage on the one hand and tolerating microbial life where it is necessary and useful on the other. The new book from Frank Sauer provides a comprehensive overview of the working mechanisms and possible applications of microbicides for coatings - invaluable for formulators and technicians as well as for business people with a basic knowledge of chemistry and biology.



UNDERSTANDING ADDITIVES

by Bodo Müller

This book covers everything about the mode of action, application and possible side effects of the most important coatings additives - in a single volume, presented in a textbook style. It reflects the needs of practical work - thus it enables the reader to rapidly gain a solid grounding in these critical, yet complex constituents of all paint formulations. It provides both an overview and in-depth basic knowledge of the most important classes of additives. The various types of damage eliminated or prevented by additives are vividly illustrated with colour photos. An indispensable companion for formulators!



Gisela Gehrenkemper,
Editor European Coatings
Library

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