



Hesse Lignal

inspiring you



ORIGIN

DECORATIVE

Now for tomorrow

Modern lacquer systems to
achieve a sustainable future





Let's consider the generations of tomorrow

What sort of world do we want to leave to subsequent generations? As a family-run company with intergenerational history, we feel compelled to deal with this question right now. The decisions that we make don't just have a direct impact on our balance sheet, our employees and our customers, but ultimately also on the future of our children and grandchildren. They are the adults of tomorrow, and our actions today lay the foundations for their future quality of life. We therefore see it as our duty to make a contribution to the environment and climate protection by acting in a way that is resource-conserving and sustainable.

So we have made a far reaching decision: by the end of 2023 we will have used sustainable alternatives to replace all nitrocellulose lacquers, solvent-based stains and solvent-based, acid-hardening lacquers in our product range; by 2030 this will

include all other solvent-based products. Our goal is to reduce VOC emissions by switching to modern lacquer systems. Hesse will furthermore extend the proportion of sustainable raw materials in its portfolio.

We are aware that this is a major step, which will require a high level of commitment. But we are also convinced that this action is necessary to preserve a consummate world for our grandchildren and to meet the requirements of future generations of customers.

Hans J. Hesse and Jens Hesse

“Each and every one of us can make their own contribution to the environment and climate protection – we want to be active in playing our part.”

Hans J. Hesse and Jens Hesse, Management Board of Hesse Signal

People and the environment need protection

TARGETS FOR SUSTAINABLE DEVELOPMENT

<p>1 NO POVERTY</p>	<p>2 ZERO HUNGER</p>	<p>3 GOOD HEALTH AND WELL-BEING</p> <p>Ensure healthy lives and promote well-being for all at all ages</p>	<p>4 QUALITY EDUCATION</p>	<p>5 GENDER EQUALITY</p>
<p>6 CLEAN WATER AND SANITATION</p>	<p>7 AFFORDABLE AND CLEAN ENERGY</p>	<p>8 DECENT WORK AND ECONOMIC GROWTH</p> <p>Promote inclusive and sustainable economic growth, employment and decent work for all</p>	<p>9 INDUSTRY, INNOVATION, AND INFRASTRUCTURE</p> <p>Build resilient infrastructure, promote sustainable industrialization and foster innovation</p>	
<p>10 REDUCED INEQUALITIES</p>	<p>11 SUSTAINABLE CITIES AND COMMUNITIES</p>	<p>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</p> <p>Ensure sustainable consumption and production patterns</p>	<p>13 CLIMATE ACTION</p> <p>Take urgent action to combat climate change and its impacts</p>	
<p>14 LIFE BELOW WATER</p>	<p>15 LIFE ON LAND</p> <p>Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss</p>	<p>16 PEACE, JUSTICE AND STRONG INSTITUTIONS</p>	<p>17 PARTNERSHIPS IN ACHIEVING THE GOALS</p>	

We know that as a coating and stain manufacturer we bear a very special ecological responsibility. Solvent-based lacquers cause avoidable emissions and the depletion of non-regenerable raw materials. Such products also have negative impacts on the health of those processing them.

In order to live up to this responsibility, we are basing our corporate alignment on the United Nations (UN) Sustainable Development Goals (SDGs), which came into force in 2016. This involves us paying special attention to combating climate change. We therefore feel that it's important for us to make our products more sustainable. Although our employees and our premises also play a decisive part in our sustainability strategy. Our focus is firmly fixed on aspects such as the collective bargaining agreement in the chemical industry, equal pay, and the involvement and continuing professional development of our employees. At our premises we

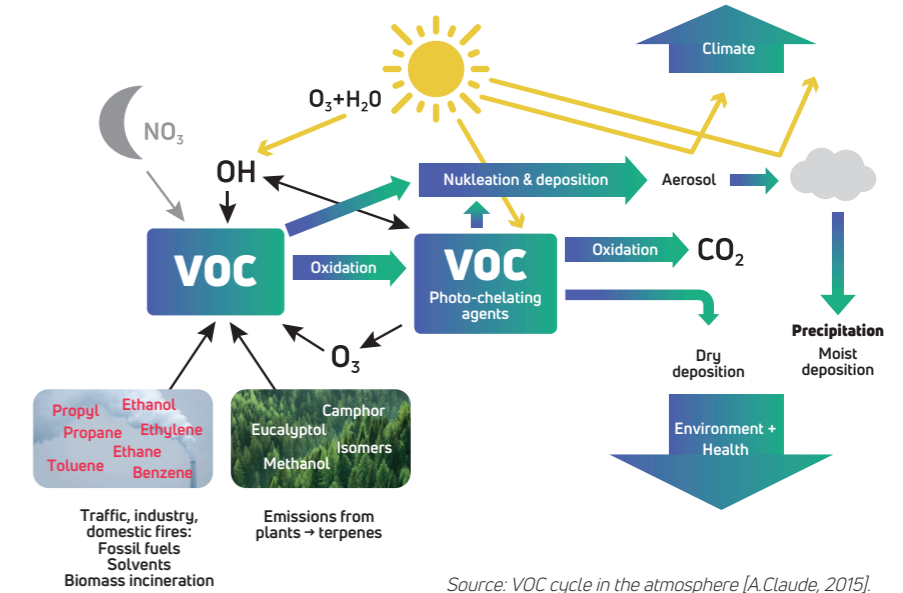
are investing in thermal renovation, photovoltaics, a pellet heating system and e-mobility.

We do nevertheless believe that we need to go further, and that we can only achieve our sustainability goals by not using solvents. They ultimately have a far-reaching impact on people, animals and nature.

Reducing volatile organic compounds

Among other things, switching our product range enables us to reduce the volume of volatile organic compounds (VOCs) resulting from the use of petroleum-based solvents. These are harmful to health as well as to the climate and the environment. Although much has been done in recent decades to reduce VOC emissions, the printing and coatings industries remain the world's largest users of organic solvents.

VOC components evaporate even at low temperatures and form ground-level ozone when they encounter UV rays. Volatile organic compounds can also be washed out of the air by precipitation. They then hit the earth and thus cause soil pollution. VOCs from fossil sources can moreover oxidize in the atmosphere through contact with oxygen. This results in climate-damaging CO₂ being produced. In addition, indoor VOCs pollute the ambient air when they evaporate. They can then irritate the respiratory tract of anyone present and can cause allergies.



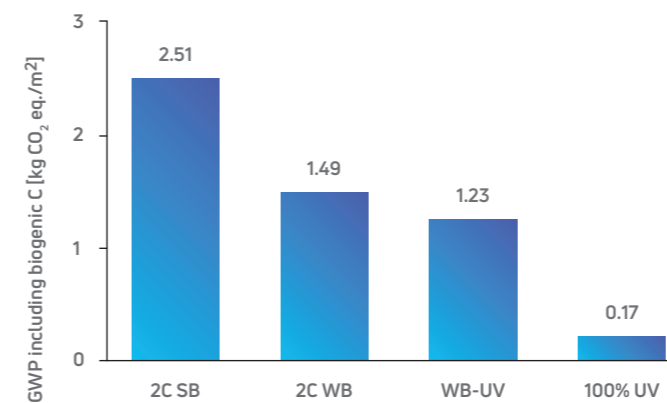
Source: VOC cycle in the atmosphere [A.Claude, 2015].

Preventing health risks

There are of course appropriate precautions and regulations to protect employees at companies which process lacquer from the hazardous properties of the substances used at their workplace. Nevertheless, there always remains a certain health risk for all those who work with petroleum-based lacquer solvents. This risk can only be averted by not using solvents.

Making a contribution to slowing down global warming

Industrial and craft companies can make an important contribution to the fight against climate change by switching to sustainable products. Petroleum-based solvents ultimately have a very high global warming potential (GWP). Studies have shown that solvent-based lacquers have the highest carbon footprint, and 100% UV systems without fossil raw materials have the lowest. "Switching from solvent-based PU lacquer to a corresponding 2C water-based lacquer can save 1 kilogram of CO₂ per square metre of surface area", explains Dr Sven A. Thomsen, Head of Research & Development at Hesse Lignal. "Even a small company can therefore cause large quantities of CO₂ per year."



Applied on a 1m² wooden surface, the solvent-based coating has the highest carbon footprint and the 100% UV system the lowest

Using sustainable raw materials

For a long time, there were no alternatives to the use of fossil raw materials in lacquer production. But our extensive research and development activities in recent years have enabled us to succeed in developing lacquers from regenerative basic materials, such as water or renewable raw materials, which are in no way inferior to traditional products in terms of quality. Our product range already includes products with a bio-renewable carbon (BRC) content of up to 30 per cent, and Hydro lacquers with a renewables ratio of around 10 per cent.

These findings mean that we can now position our product range for the future, make our own contribution to environmental and climate protection, and protect both our employees and our customers from the effects of substances that are hazardous to health.

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Dr Sven A. Thomsen, Head of Research & Development at Hesse Lignal

Learn more about the impacts of solvent-based products:





Sustainability

as a competitive factor

The need for ecological action does not arise solely as a result of the climate issues. Sustainability is increasingly developing into a competitive factor that will soon determine success and failure in crafts and industry. Switching to climate-friendly lacquers is therefore also a logical consequence of the current market developments. There are now many ways in which you can already benefit from the use of these products.

Rising demand for eco-friendly products

Increasing environmental awareness among the population means that the topic of sustainability is rapidly gaining significance in many areas of life. This is mainly due to the increasingly noticeable impacts of climate change. Which is also the reason why the demand for sustainable products is steadily growing. The young generation in particular, which includes the customers of tomorrow, is calling for a rethink. Only those who fulfil these customer expectations can survive in the market in the long term.

Protecting the health of employees

The processing of solvent-based lacquers produces vapours that can damage the health of employees. Investment in appropriate protective measures is therefore required. The use of such surface coatings is associated with penetrating odours that can become harmful in everyday working life. Switching to modern and sustainable lacquer systems therefore also has a positive impact on your employees. The switch to climate-friendly lacquers thus increases the well-being of the workforce and becomes an important argument when recruiting skilled workers.

Secured raw material availability and price stability

Fossil raw materials are finite, so one day they will be depleted and no longer available. On the other hand, we can access sustainable

raw materials on a permanent basis and thus ensure that we can continue to manufacture our products in the future. It is also to be expected that the prices for fossil raw materials will rise steadily due to falling supply while demand remains constant. There is moreover the possibility that they could become more expensive due to global political events. We can become less dependent on these price fluctuations by using sustainable raw materials.

(Just think of wheat from Ukraine)

“Switching to sustainable products means that companies processing lacquer can gain a profitable competitive advantage over their competitors. After all, the demand for climate and eco-friendly products is growing rapidly.”

Martin Braun, sales technician
at Hesse Signal

Successful pioneer: an interior fitter shows how to make the switch

Craft businesses can realise massive benefits from using climate-friendly surface coatings. Joinery workshop Hammermeister Raumobjekt provides a good example of what can be achieved by renouncing solvent-based products.

"There's no going back", is how interior fitter Thomas Hammermeister sums it up. He has exclusively been using Hydro lacquers in his Hammermeister Raumobjekt joinery workshop in Heinsberg since 2016. Before that, his 15-strong team had been working with solvent-based products. At the time, however, the craftsman was concerned about the solvent vapours produced during lacquer processing, which were noticeable in the workshop despite a very good exhaust air system. He finally came to the conclusion that something had to change: "I wanted to reduce the emissions as far as possible for my employees and our customers." Thomas Hammermeister therefore decided to ban solvent-based coatings from his joinery workshop and replace

them with eco-friendly alternatives.

He turned to Hesse Lignal to obtain information about appropriate products. As a long-standing partner of his joinery workshop, we were ultimately able to recommend suitable lacquers and support him with the switch.

His plan was not immediately met with enthusiasm among his employees, however: "There was a lot of internal opposition", he states. "But that's not surprising, since many craft businesses shy away from change. A broken-in shoe is after all more comfortable."



Protecting employees and meeting customer demands

He did nevertheless still want to change things. Because he saw the switch as a major opportunity: "Doing without solvent-based products doesn't just mean that we can protect our employees. This switch also positions us as a modern business, which meets our customers' increasing demands for sustainability. In particular it's the younger generation who are demanding sustainable production methods." He also saw an opportunity to protect his clients from any toxic fumes emanating from their finished furniture. "I wouldn't want to subject our customers to them."

From the very beginning, however, he was also aware that the switch would be accompanied by major challenges: his employees would have to get used to altered work processes and the handling of new materials. It also required a certain level of investment: among other things, he had to buy stainless steel spray guns and a water connection with spray booth. A humidifier was also needed, since the drying process for solvent-free products requires not only a constant temperature of around 20°C, but also a humidity of 40 to 60 per cent in the joinery workshop. Equally important is a targeted airflow for air circulation during drying.

Huge increase in quality

But the effort was worth it: using solvent-free products means that the joinery workshop is now achieving a more consistent surface process, lower drying times and faster, cleaner production. The costs associated with expensive disposal and storage of flammable solvents have also been eliminated. "We thought at first that it would be easier. It took a bit longer than expected until we were able to implement the perfect surface coating. But in retrospect it was worth it, because everything negative turned into a positive and we were ultimately able to gain a massive increase in quality", Thomas Hammermeister says with enthusiasm. "But we were also pioneers. Switching is probably easier today." His employees are now also convinced by the climate-friendly products. "There are still a few cases where we do have to resort to solvent. Then there's grumbling throughout the workshop."

Thomas Hammermeister is convinced that there is no alternative to doing without solvents in the long term. The market is demanding a switch: "Water-based lacquer is the only logical consequence."



"I wanted to reduce the emissions as far as possible for my employees and our customers."

Thomas Hammermeister, interior fitter and managing director of the Hammermeister Raumobjekt joinery workshop

Please find out a deeper insight into the switch to Hydro systems at Hammermeister Raumobjekt





Success stories:

Industrial company reduces VOC emissions by switching from solvent-based to Hydro lacquer

Water-based lacquers can be used in industry to act as a climate-friendly alternative to solvent-based products. The fact that switching can achieve remarkable results very quickly been demonstrated by a Hesse customer from the yacht-building sector.

An industrial customer came to the Hesse Lignal team with an urgent request in June 2021: those responsible for running the industrial yacht-building company had decided to use more eco-friendly lacquers in future, to act more sustainably and become less vulnerable to possible raw material crises. The customer was therefore looking for a product that does not require any climate-damaging solvents, yet at the same time has similarly resistant properties as the spray coating previously used in their production. Hesse Lignal was ultimately able to come up with an alternative – a water-based lacquer.

HYDRO-UV lacquer meets high quality requirements

"The specific properties and resistance of this Hydro-UV lacquer can superbly meet the customer's requirements", explains Martin Braun, sales technician at Hesse Lignal. At the same time, the solvent-free lacquer also proves to be extremely eco-friendly. Compared to the UV spray coating, the water-based product contains significantly fewer volatile organic compounds (VOCs).

These arguments also convinced our customer: the industrial yacht builder decided to convert its spraying machines from solvent-based to water-based lacquer. "We immediately consulted our laboratory, adapted the product to the customer's requirements and provided some test material", reports Martin Braun. Once the decision was made to change the coating, it took just five days before the company was able to use the product in its production.

VOC emissions reduced by 17,000 litres

The yacht builder involved soon noticed the advantages of this climate-friendly lacquer: while the VOC content of the spray application was still 80 per cent in June 2021, only one per cent was measured in July 2021. It therefore succeeded in reducing its VOC emissions from production in 2021 by 17,000 litres compared to 2020. Although it is not only the environment, but also the company that is benefiting from the switch. The flashpoint is now above 60°C, so there is no longer a need for explosion protection measures and expensive storage of hazardous substances, for example.

Continuing to advance sustainability efforts

"Numerous companies from a wide range of sectors have rethought their approach due to the threat of raw material

crises. More and more of them are deciding on a new direction, and are adopting a more sustainable approach", says Martin Braun. "Many industrial companies feel there is no going back to solvent-based products." Hesse Lignal is instead working with numerous customers to further reduce their VOC emissions. Even the yacht-building company mentioned above does not yet see itself as having reached its goal. Which is why the rolling lacquer that Hesse Lignal has also been supplying for many years is soon to be replaced by a more sustainable product. "This will enable the company to make a successful contribution to climate protection and make a name for itself as a company that operates sustainably", Martin Braun is convinced.

"Many industrial companies feel there is no going back to solvent-based products."

Martin Braun, sales technician at Hesse Lignal



Martin Braun gives a deep insight into the switching process:



We will help and support you during the switch



We are aware that a product switch like this involves some extra effort. So we won't leave you without help during the switch. You can benefit from our equipment and technology consultancy to assist you on your path to using coatings in a climate-friendly manner, and we will actively support you in your project. Together we'll find the appropriate, eco-friendly alternative products, and we'll draw up a suitable plan for converting your equipment and processes.

Simply contact your familiar Hesse Lignal sales representative. We have also collated further information for you on our website. There you will find further contact details of people who will support you in your endeavours.

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Contact

Do you have any questions about Hesse Lignal, or would you like to learn more about our climate-friendly products?

Our team will be happy to provide you with any information you may require.

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