

Part 1: Sustainability

Coatings dedicated to ecological sustainability

The use of natural and limited resources is increasing worldwide. There is a growing competition for diminishing raw materials. Resource- and emission-intensive industrial nations are a challenge to be mentioned here, as well as the rapid progress of developing countries. In addition, there are global environmental problems, such as climate change or increasing amounts of waste. The idea of sustainability is becoming ever more important.

Sustainability

The concept of sustainability must be considered holistically. It comprises the three pillars of **economy, ecology and social affairs**. In all three systems, resources may only be used up to the extent that they can regenerate. Natural systems must be preserved in their central characteristics, so that they are also available to future generations.

This white paper focuses on the **ecological dimension** of sustainability. This includes environmental and climate protection as well as the planned use of natural resources.

Sustainability in the printing industry

In the printing industry we know the demand for sustainable processes and technologies. This is because printing companies use a wide range of forestry and chemical products. Added to this are the emissions associated with the printing process. Energy efficiency, CO₂ reduction or activities to reduce waste are the focus of attention.

Also, our market environment is shaped by the concept of sustainability. Many consumers agree to spend more money on sustainably produced printed products, for example packaging. Legislation requires sustainability that is verifiable. No wonder, then, that brand owners are taking action and intensifying their sustainability efforts along the entire supply chain.

In particular, packaging made of renewable raw materials or the recyclability of printed products are of great importance in this context.

To summarize: Environmental sustainability is no longer a niche issue. Only those who know their own responsibility and contribute can sustainably improve the image of their company and realize a competitive advantage.



Sustainability and overprint varnishes

Sustainable material purchasing plays a central role in achieving the goals of brand owners. For printers, this also includes the use of overprint varnishes.

Coatings, for example, must meet a wide variety of requirements. Firstly, they ensure an optimal and, depending on the type of finishing, effective visual appearance. Secondly, they protect the printed product from scratches or the abrasion of the printing inks. Not least, coatings can add valuable functions to the printed product.

However, coating manufacturers currently find themselves confronted with a further requirement. Coatings should be sustainable and save resources and at the same time fulfil the technical properties of conventional products.

The objective is to create new product solutions.

Water-based coatings versus bio-based coatings

Water-based coatings have proven to be the leading technology in the graphic arts industry due to their many advantages. They are solvent-free – environmentally friendly, odorless and tasteless.

However, water-based coatings are based on petroleum derivatives. These are processed in the large-scale chemical industry to produce appropriate raw materials. The disadvantage: oil is a limited resource – used here on

consumables that are applied to products with a limited shelf life, i.e. printed products.

To make water-based overprint varnishes more sustainable, raw materials of fossil origin can be replaced by alternative materials. Possible options are recycled fossil raw materials or bio-based products. These include renewable raw materials or raw materials whose origin can be found in biomass.

Excursus

ACTGreen® Sustainable Coatings

ACTGreen® Sustainable Coatings is a sustainable portfolio of overprint varnishes for use on folding cartons, publications and commercial prints. Coatings are a further development of existing, mature products with the same convincing technical properties. The products have been reformulated so that they are partly based on renewable and recycled raw materials.

This includes both recycled raw materials of fossil origin and bio-based materials (e.g. renewable resources). Depending on functionality and desired properties, the coatings can have a sustainability of more than 60 %.

The indicated percentage refers to the coatings' solids content.

Currently available is a portfolio of water-based coatings from dull matt to gloss for standard and premium applications. Depending on the product, these coatings provide a fast drying, a very high wet block resistance and a good scuff resistance. Also available is a hot-foil stampable version as well as products for the two-sided varnishing. The percentage of sustainability varies depending on functionality and desired properties.



ACTGreen®
Sustainable Coatings

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