



PE-FREE
PHOTO PAPER

White Paper



PICTURE
THE WORLD
WITHOUT
PLASTIC.

Paper recycling

The recycling of paper is the process of returning wastepaper to the paper cycle to produce new paper products. It has several important benefits.

Since the paper cycle itself is already carbon neutral, recycling keeps the carbon locked up for longer and out of the atmosphere. Additionally, it conserves resources.

But: did you know that all existing professional photo papers cannot be recycled neither as paper nor as polyethylene (PE), because the components cannot be separated?

Characteristics of a photo paper

There are two key differences between a professional photo paper for inkjet printing and normal paper:

- 1) A thin polyethylene (PE) film on the front and back of the paper to guarantee flatness even when high ink amounts are used. Without this barrier the ink would bleed through to the backside of the paper and the paper would become wavy (cockling)
- 2) An ink receiving coating to provide brilliant colors and pin sharp reproductions

Polyethylene (PE) is a versatile synthetic resin made from the polymerization of ethylene.

Even though PE has been determined to be non-hazardous by normal routes of exposure including skin contact, inhalation and ingestion it is by far the most common type of consumer plastic.

Many of the products we use in our everyday life contain PE, e.g., shampoo bottles, plastic bags or milk cartons.

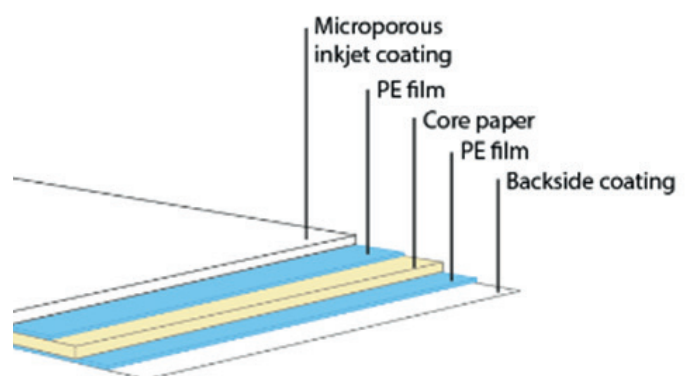
Although nobody would be surprised if being told that sandwich bags or kids toys contain plastic most end consumers of photo papers would be surprised that the photos, they have in their family photo albums or fine art photos hanging on their wall at home, contain a fair amount of polyethylene plastic.

Manufacturing process of a standard photo paper

In order to understand the build-up of a standard photo paper we should study the graph on the right.

The core of a standard photo paper is a base paper with a weight between 160-220 gr/m². This base paper has a PE film applied on the top and on the backside.

The PE film on top guarantees a particularly smooth surface as a precondition for the coating and protection against the ink being absorbed by the paper, whereas the backside film enhances the flatness of the paper and in consequence its usability in the printing process.



The microporous ink acceptance layer on the top surface of the photo paper is made up of lots of micro pores. Microporous coated paper can accommodate both dye and pigment inks. Microporous paper dries quickly to a water-resistant finish.

Already today the core paper, as well as the microporous coating can be processed in a recycling process.

The PE film on top and bottom side of the paper is the challenge. Globally, no recycling company can recycle PE-filmed papers as the film is irreversibly attached to the core paper.

How much PE is being used in the global photo paper market?

Analyzing the market volume, we come to the following conclusion:

Today the global photo paper market consists of approx. > 50 million m².

Based on our definition before, the paper being used to cover this demand is being filmed with PE.

On average 45 gr. of polyethylene is being used to cover 1 m² of photo paper which equates to the following annual use of PE in the photo paper industry:

50 million m² annual usage x 45 gr. PE/m² = 2.250 t of PE annually used in photo paper industry.

To visualize this amount of photo paper the artist Christo could have wrapped the Arc de Triomphe in Paris approx. 2000 times or when just accumulating the weight of the PE that is being used it would equal the average weight of 3,000 African elephants.

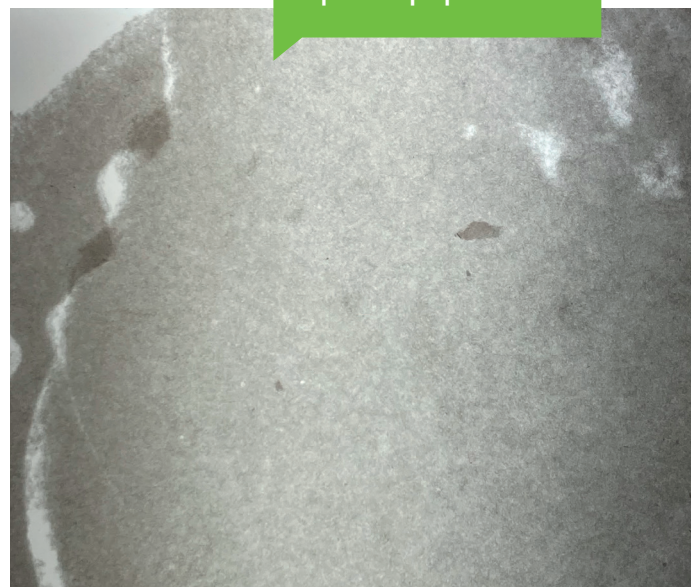
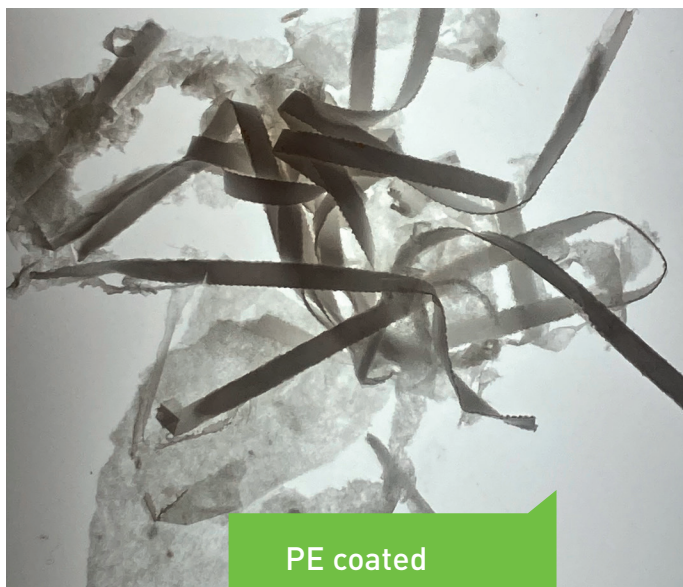


What does it mean? We have a long-term environmental problem with classic photo paper which is widely not known by the end user.

Due to the misconception that a photo paper can be discarded into the wastepaper bin, a massive amount of Polyethylene ends up in today's wastepaper process where it cannot be recycled and must be eliminated from the process at a high cost and effort.

To get an even better understanding, here is the result of a simple but impressive test that compares the recycling ability of a PE filmed paper in contrast to a photo paper not containing PE.

When the two different photo papers are dissolved into a water suspension and a new sheet of paper is formed from the paper pulp, the differences become very clear.



From the photos above, it can be clearly seen that the PE-filmed photo paper does not decay into its original components following the testing procedure but instead remains in its original "spaghetti" shape. Contrary the non PE-filmed photo paper immediately starts to create a new paper layer when being returned into its original components.

Solution

What is the solution to this problem which is largely unknown by the public? Educate the world population which components a classic photo paper consists off in order to change the process?

NO!

First, this process would take too long and would never be 100 % accurate and even worse: The problem of further introducing PE into the environment would not stop. The long-term problem would not be solved.

Invent a photo paper that no longer requires a PE coating and instead use a barrier that can be recycled but still offers comparable printability?

YES! This is what we did with our unique GreenGrafX Photo Paper!



Conclusion

Less plastic, more sustainability: that's what our **GreenGrafX Photo Paper 220 satin** stands for. It is the first choice for brilliant print results in photo and poster applications as well as in large format printing.

The material is not only made in Germany and FSC® certified, but can also be recycled via the wastepaper cycle – a major advantage over all conventional photo papers. So, after the photo is before the photo, thanks to an innovative barrier that replaces the PE film.

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