

Plastic

A blessing or a curse?

By *Beate Matthies*

Bottles, containers, cups, cutlery, credit cards, automobile parts, electronic devices, folders, furniture, protective clothing, gloves – plastic, polyester and other artificial materials are almost omnipresent in today's world.

Closely connected to technological development and praised as multi-purpose material on the one hand, plastics are, on the other hand, also considered as a curse of modern technology destroying the human being and the environment.

We certainly have to be careful with saying that it is a modern technology and even more careful when thinking that all previous materials were better, healthier, and friendlier to our environment. Are we aware that human kind has always been searching for a miracle material that would be indestructible, light – and recyclable?

There is evidence from the Middle Ages that mankind was already searching for artificial materials that would supplement what was available and could be more readily produced. Early types of plastics were made of bio-derived materials, such as egg and blood proteins. Natural rubber was used in



1600BC, and inventors were trying to copy natural materials and make them perfect.

By the end of World War I, we had reached a state where chemical technology had entered many areas in our daily lives. With constant further development, we, in the so-called Western World are today almost constantly surrounded by plastics – in the kitchen, bathroom, offices, garden tools, etc.

In the 1960s and 1970s plastic materials became more and more common. When the worldwide oil crisis occurred in 1973, attention was drawn to the fact that oil or fossil fuel is needed to produce plastic. Do we make ourselves dependent on oil producing states if we continue using plastic?

There was certainly a concern, but the joy about the wide range of plastic items prevailed. Today, about 40 years later – who thinks about the oil crisis?

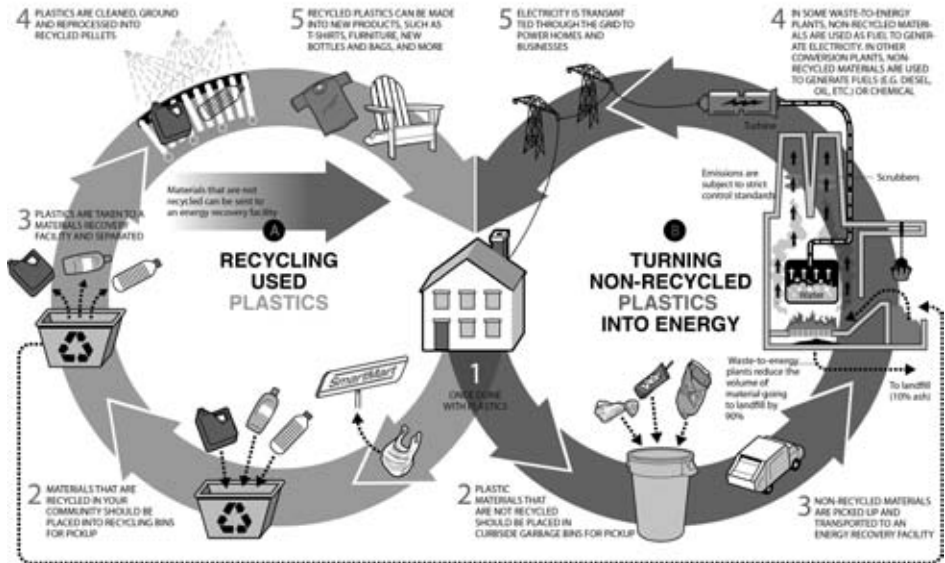
Today, we know that our concerns are not only in the making of plastics and synthetic fibres, but also in the use, in the disposal, and the re-use of artificial miracle materials. There is a growing awareness of the negative impact of plastic and now, more increasingly, polyester.

Living plastic free today is certainly a huge challenge. We realise that indestructible also means that you cannot just throw the material in the bush. In many countries, people eat out of one pot or have their meal on a banana leaf. The pot is reusable again and again for years, and the banana leaf is certainly degradable. But even in countries with this very ecological tradition, shops are offering plastic cups, plates, and cutlery. What may be considered by some as a status symbol, becomes an ecological problem in terms of disposal. Statistics show that an estimated 299 million tons of plastics were produced in 2013, representing a 4% increase over 2012, and confirming an upward trend over the past years¹.

So, how can we get rid of indestructible material? If it is not needed anymore, it could be re-cycled. This challenge has led to amazing results, such as the production of clothing out of plastic bottles. Yes, it is for real!

1. Worldwatch Institute, January 2015

DIVERTING PLASTICS FROM LANDFILLS: A TWO-PRONGED APPROACH



Clear plastic bottles are shredded into plastic flakes. Then, they are converted into small pellets which are melted, extruded, and spun into polyester yarn. What a clever idea and technique to re-use plastic bottles and fibre waste!

However, this is a human solution to a human problem. Yes, we are re-using material that is considered “indestructible”, but isn’t this too good to be true – is there a catch?

The new polyester material consists of microfibres which have so many positive characteristics of which we are all very familiar from clothing and jackets to the finish on high-quality wood products such as guitars, pianos, and vehicle / yacht interiors.

Unfortunately, there are now concerns about this recycled product used in clothing. A study by the clothing brand Patagonia and University of California, Santa Barbara, found that when synthetic jackets made of microfibres are washed, on average 1.7 grams of microfibres are released from the washing machine. These microfibres then travel to local wastewater

treatment plants, where up to 40% of them enter into rivers, lakes, and oceans where they contribute to the overall plastic pollution². Apparently, different types of fabrics can have very different levels of emissions, but the fact is, that the microfibres pollute the shorelines around the world. Fish have been found with microfibres in their stomachs. Many fish are filled with microfibres and die before they reach reproductive age.

Does this mean we should banish all plastic and polyester? I think that plastic has been revolutionary for our development. However – maybe we can think about what *Paracelsus* said in the early 16th century:

“ Sola dosis facit venenum ”
(The dose makes the poison)

Maybe we have to think carefully when we use plastic and ask ourselves: do I really need it? Can I use an alternative natural product? How do I use it and how can I dispose of it in the most environmental friendly way? What alternatives are there?

There are some biodegradable plastics that can degrade to the point where microorganisms can completely metabolise them to carbon dioxide and water. Today’s scientists are working not only on improving material, but they also keep in mind the disposal of it.

And let us not forget that we can sometimes go back to past traditions: we still have our traditional materials like cotton, linen or silk – and we can use porcelain plates, real glasses, and steel cutlery. Avoiding plastic when it comes to eating is better for the environment, for the stomach, and for your seven senses! The food and drinks taste so much better.



2. en.wikipedia.org/wiki/Microfiber