

Practical Application of Copier Materials with Less Environmental Burden

**We use plant-based plastic in copiers.
Pursuing the possibility of alternative resources to oil.**

Ricoh is the first in the industry to adopt new product materials to replace petroleum-based resins used in copier parts.

We try to achieve the practical application of materials with less environmental burden to replace oil.



imagio Neo 752ec
"imagio" is the brand name used in Japan.

Not only what we can do but also what we must do.

Start making improvements from the things that have significant environmental impact.

The Ricoh Group develops products with the aim of reducing the environmental impact of products throughout their entire lifecycle to a level that the Earth's self-recovery capability can deal with. To attain this goal, we made a detailed analysis of all our business activities, covering all areas of collection of resources, manufacturing, distribution, use, and recycling. Based on this analysis, we started making improvements in areas that have a particularly large environmental impact at an early date. Our efforts in this respect include improving the energy-saving function of our products, reducing environmentally-sensitive substances, and developing a function that helps customers use less paper.

We cannot achieve the sustainable environmental management that Ricoh practices unless we clearly prioritize the issues that we have to address, develop measures for them, and carry out effective reductions in appropriate areas. When we started doing all of this, we found that reducing environmental impact in the procurement process of raw materials and parts was quite a challenge. The environmental impact of this process accounts for about 50% that of all our business activities. Developing product materials that have less environmental impact has become the most important issue for us.

Having cleared major technical hurdles, we succeeded in using plant-based plastic in copiers.

When petroleum-based plastic is incinerated, it is as if the carbon contained in the ground is released into the atmosphere, increasing the total amount of CO₂ in the air. On the other hand, although CO₂ is released when plant-based plastic is incinerated, the gas was originally absorbed by plants through photosynthesis during growth. Therefore, the total amount of CO₂ in the air does not theoretically increase, which means that plant-based plastic has less environmental impact and contributes to preventing the acceleration of global warming.

While plant-based plastic has the advantage mentioned above, we had to clear such technical hurdles as crashworthiness and fire retardancy before using this material in copiers. The Ricoh Group, in collaboration with Mitsui Chemicals, Inc., has been working to solve these problems since 2002 to find ways to put this material into practical use. We have made many improvements to the material and repeated experimental production.

After all these efforts, we have successfully developed a new plastic material that is made from corn and has a high percentage of plant-based material (more than 50%). In 2005, we used this new plastic for part of our digital multifunctional copiers, imagio Neo 602ec/752ec, for the first time.

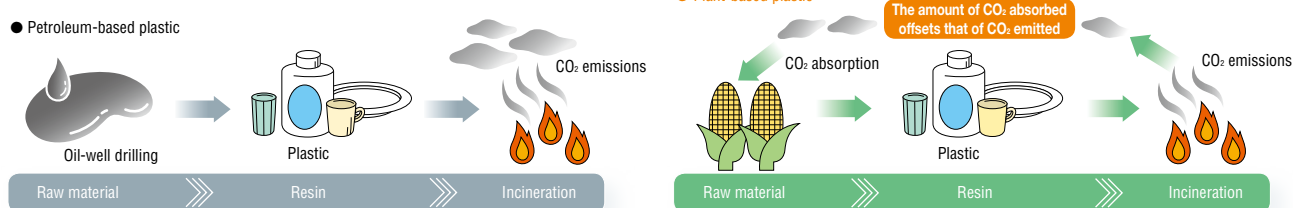
We quickly launched copiers made of this plant-based plastic into the market to spread and promote plant-based plastic.

There is a reason for our quick launch of the product made from this new material into the market.

New materials with a low market penetration rate have the serious disadvantage of entailing a high cost. However, when 10% of the total amount of plastic used in Japan is replaced with plant-based plastic in the near future, it is estimated that more than 700,000 tons of CO₂ will be reduced in a year. From this, we can understand how great a contribution plant-derived plastic is to the global environment. If we rely on and compete for such fossil resources as oil, which are projected to become depleted, our society cannot be called a sustainable society.

With the launch of the imagio Neo 602ec/752ec, more manufacturers will know about plant-based plastic, which may facilitate the cross-industrial development of the material. This will accelerate technological innovation and cost reduction, thus raising the penetration rate of plant-based plastic. Ricoh will further improve such plastic and increase its use in more products.

Comparison of CO₂ emissions from petroleum-based plastic and plant-based plastic



Employee Interview

People who are engaged in manufacturing are responsible for developing new materials with less environmental impact.

Because there were various technical hurdles in putting plant-based plastic into practical use, we went through the process of trial and error repeatedly to determine the right raw material as well as to raise the percentage of the material used. We spent three years improving the material to meet safety standards and achieve a recycling function before putting the new plastic to practical applications. Manufacturers are responsible for selecting materials used in their products. I think we must take the initiative in using new environmentally-friendly materials, thus contributing to improving society. When we think about the oil depletion issue, making product materials using raw materials (plants) that can be grown in the cycle of nature is a good thing. Plant-based plastic is merely the first step. Now, we have to continue with the second and third steps.



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