

From formulation to implementation

The government is making steady progress towards creating a plastics-free society. However, not all plastics harm the environment. A case in point is biodegradable plastics, for which the industry wants the ISO guidelines to be implemented strictly to avoid misleading the customers and manufacturers. Anwesh Koley finds out how proper implementation of these guidelines and raising the awareness levels of people on the same can help save our environment.

In an age where sustainability is one of the biggest issues facing the packaging industry, the use of bioplastics seems the most feasible option considering the rapid increase in pollution levels caused by petroleum-based plastic materials. The major difference between biopolymers and hydrocarbon polymers is that biopolymers, due to their physical & chemical structure, can be decomposed by microorganisms and assimilated in the soil again.



They perceive the initiative as a threat to their industry and livelihood. But, the sentiments of people today are different from the government's perspective and are proactive in their support for bioplastics.

Use of oxo-biodegradable plastics

The use of oxo-biodegradable plastics is now widely accepted across the country and there are valid reasons that show why companies are moving towards it. Mahendra Jain, Director, Symphony Polymers Pvt Ltd, says, "Oxo-biodegradable packaging starts breaking down in the presence of oxygen, and the process is accelerated by heat, Ultraviolet (UV) light & stress, followed by biodegradation. This results in a slow carbon-release favourable to the environment as a nutrient for plants." This type of packaging should help reduce major environmental problems caused by littering of non-degradable packaging, which clogs drains, sewers and rivers. It can also be recycled with other oil-based plastics in a normal recycling process.

What do the guidelines imply?

The ISO 17088 guidelines specify procedures and requirements for identification and labelling of plastics and plastic products suitable for recovery through aerobic composting. This specification is intended to establish the requirements for labelling of plastic products & materials, including packaging made from plastics, as 'compostable' or 'compostable in municipal and industrial composting facilities', or 'biodegradable during composting'. The labelling has to conform to any international, regional, national or local regulations.

The current market for bioplastics is restricted as compared to other countries where they have high utility. "Oxo-biodegradable plastics are essentially A2W additives, which ensure that the material breaks down into particles when kept under the soil for more than 180 days," adds Pathania. The government is clear in terms of guidelines issued for anti-solid waste management.

Stumbling blocks

Adoption of oxo-biodegradable packaging



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Symphony Polymers Pvt Ltd

for the industry faces some hurdles. Oxo-biodegradable packaging is more expensive and requires continual exposure to microorganisms in an industrial composting environment; hence, this rules out the problem of littering of plastics. Composting is an artificial process with a shorter time-scale than natural biodegradation, which results in rapid, unfavourable carbon release into the atmosphere. "These cannot be recycled in the normal recycling process and have to be segregated from the waste stream and treated separately, which considerably increases the cost. Furthermore, it is difficult for manufacturers to physically distinguish between hydro-biodegradable and normal plastics," adds Jain.

The government has made it mandatory that plastic bags of thickness less than 40 microns cannot be manufactured for packaging purposes. But similar standards are yet to be implemented for bioplastics. "Today, our customers are skeptical about the long-term viability of plastics, be it classical plastics or biodegradable ones. If the government does not demarcate

between classical and bioplastics, a huge share of the market will not achieve full benefits of bioplastics," says Pathania.

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