Cathy Cirko

Degradables Made Simple

Considering using degradable packaging? Get the full facts before you invest

Consumers' ongoing concern with the environment has led many food and beverage manufacturers to use degradable materials in place of more traditional materials for various food applications. But there's still a bit of a learning curve involved, meaning producers must fully understand the challenges and opportunities of using degradables before making any decisions.

What is Degradable?

There are many different terms being used in relation to degradables. Degradable essentially means that the product or material will eventually break down into minute particles. Biodegradable, on the other hand, refers to a process that takes place after degradation. In the case of plastics, for example, it means that the smaller particles left behind after degradation are consumed naturally by micro-organisms as a source of food and energy. The resulting products are water, carbon dioxide and humus (organic matter).

There are several different kinds of biodegradable materials available. Compostable products have been designed specifically to biodegrade in a commercial/industrial composting facility. Certified compostable plastics will biodegrade in such an environment within 180 days. Oxobiodegradable materials use a chemical additive to "kick start" the degradation process – which may be triggered by UV sunlight, heat and/or mechanical stress – and then biodegrade. Water-soluble materials "dissolve" in water before biodegrading in the sewage system. One type of material that is degradable, but not biodegradable, is photodegradable plastics. This material is triggered to degrade by UV light, eventually breaking down into minute particles. However, those particles never fully disappear as they would with biodegradation.

Another term now being used is "bio-plastics," a type of plastic in which the carbon source is derived from non-fossil, biological sources of renewable feedstocks – such as corn starch, soybean oil or hemp oil – instead of the oil and gas used in traditional plastics. Bio-based plastics, however, are not necessarily biodegradable. Likewise, biodegradable plastics are not always bio-based.

Understanding Standards

With so many new types of products on the market, it's more important than ever to ensure that the product being purchased will perform as expected. For that reason, the Canadian Plastics Industry Association advocates the use of industry standards and regulations to support claims of biodegradability.

More and more biodegradable standards are being introduced all the time. The composting ASTM D6400 standard is one example. Various certification agencies, including the Biodegradable Products Institute and the Bureau de Normalisation du Quebec, have the authority to test these standards. Once a product goes through the third-party certification process, it becomes licensed to use a certification symbol, showing the purchaser that it will perform as expected in a particular setting. A compostable plastic shopping bag, for example, will not perform as it would in a municipal composting facility if it is left in a landfill.

Risk and Responsibility

Companies that opt to use biodegradable products have a responsibility to ensure that the product or material chosen is the right one for the task at hand. Here are a couple of key points worth considering:

- Does the product meet a recognized standard, and has it been certified by an accredited agency to be biodegradable?
- Is there room for misinterpretation over where the product is intended to degrade and in what period of time?
- What is the likelihood of that product ending up in an environment other than the one intended, and what impact, if any, may it have?

In addition to the industry standards for biodegradable materials, Canada has a standard for self-declared environmental claims. CAN/CSA-ISO 14021-00 states that any claims regarding degradability should be specific to the product in terms of how long it will take to degrade and in what type of environment. It also suggests third-party verification of the claim be attained in order to avoid any confusion on the part of the purchaser.

Only through careful consideration of all the facts can a company accurately make an informed decision about the type of degradable product or material, if any, to use to best get its product out to Canadian consumers.

Cathy Cirko is the director general of the Environment and Plastics Industry Council (www.plastics.ca/epic), a Standing Committee of the Canadian Plastics Industry Association. Contact her at (905) 678-7405, ext. 234 or at ccirko@cpia.ca